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ON THE COVER:

The citadel of Van, Türkiye.
Photo: Zsolt Simon.

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The Hittite words for North, East, South, and West

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Abstract: This paper identifies the Hittite terms for the four cardinal directions. Until now, our understanding of Hittite horizontal cosmology has been limited, with cardinal direction terms often represented logographically. The study collects attestations of these terms, primarily from celestial omen texts, showing that, as in Mesopotamia, the Anatolian orientation system was based on the sun and, crucially, the four winds. The author argues that the Hittite words for North, East, South, and West are *tar(a)šmenaš huwanz*, *ekunaš huwanz*, *šalliš huwanz*, and *appezziš/appezziyaš huwanz*, meaning ‘the *tar(a)šmenaš* wind’, ‘the cold wind’, ‘the great wind’, and ‘the rear wind’, respectively.

Keywords: cardinal directions, divination, winds, omens, cosmography

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Spatial orientation in Hittite texts is largely based on topography and political geography. Muršili II tells us that his father stationed troops in the land of Mittani (KBo 3.4 obv. I, 16–18), that he reached Mount Lawaša (II, 15), and that Uḫḫazidi ‘crossed the sea to the islands’ (II, 30–31). The enemy Tapalazunawalliš is described as coming ‘down’ (II, 58) from his city. In a Tapikka letter (HKM 58 obv., 6–7), blind people are led ‘up’ to the town of Šappinuwa.¹ Ḫattušili I writes to Tunip-Teššup of Tigonānu: ‘Do not listen to words to the right or to the left’ (*imitta u šumēla awāti lā teštenemme*; rev., 38–39).² Muršili II lays out rules for dealing with countries ‘around’ (*araḫzanda*) the vassal Targašnalli (KBo 5.4 rev., 9–10). In festival texts, it is crucial to specify where participants go, sleep, drive, and so on; these descriptions also typically reference place names or natural landmarks.³ The Hittite realm distinguishes between an ‘upper’ and a ‘lower’ land, similar to Mesopotamia’s ‘upper sea’ and ‘lower sea’.⁴ The glimpses we gain of Hittite cosmic geography from rituals and myths suggest a vertical division of the world into a celestial realm and a chthonic realm.⁵

As a result, we encounter a wealth of toponyms that remain difficult to localize.⁶ Historical geography relies heavily on analyzing the relative distances between Hittite cities, often inferred

¹ Kryszeń 2019, 497–508 has shown that ‘up’ (*šarā*) and ‘down’ (*katta*) in these instances stand for ‘into’ and ‘out of’ rather than indicating actual contemporary topography. It is, however, likely that the phrasing stems from the fact that a city is an artificial elevation in the landscape and from a perceived difference between ‘capital’ and ‘periphery’, cf. also Kryszeń 2019, 508–509. For Hittite architectural topography cf. Görke 2013, 41–45.

² Edition in Salvini 1994, 61–80 (author’s translation).

³ Cf. also Lorenz 2017, 320–323.

⁴ Gurney 2003, 119–120; Alparslan 2017, 181.

⁵ Görke 2013, 45–50.

⁶ For the problems of the historical geography of Hittite Anatolia see Alparslan – Doğan-Alparslan 2015, 97–106.

from travel times mentioned in festival texts.⁷ Another *philological* challenge is the limited knowledge of Hittite terms for the cardinal directions.⁸ I want to tackle this issue in the following.

Sun and wind

The lack of cardinal directions in Hittite texts aligns, to some extent, with Mesopotamian sources. However, we have a better understanding of Mesopotamian horizontal cosmology—or rather, the various cosmological concepts—through graphical representations such as the Babylonian world map (CT 22.48)⁹ and the ‘wind rose’ tablet (BagM Beih. 2.98).¹⁰ Despite its enigmatic placement of the sunrise in the west, the latter neatly combines two focal points of global orientation found throughout Mesopotamian literature: the sun and the four winds.¹¹ Sunrise and sunset naturally correspond to east and west, with sunrise/east serving as the default direction in Mesopotamia and the Levant.¹² The four winds ^{IM}U_{18/19}.LU/šūtu, ^{IM}SI.SÁ/iltanu, ^{IM}KUR.RA/šadî, and ^{IM}MAR.TU/amurru align with the compass points south, north, east, and west, respectively.¹³ As actual winds, they do appear in mythic tales,¹⁴ royal annals,¹⁵ and magic texts like the *Maqlû* series.¹⁶

However, as directional markers, both the sun and the winds are rarely mentioned in narrative texts. In Assyrian and Babylonian royal inscriptions, cardinal directions are typically found in descriptions of buildings or as part of a merism for the entire world. For instance, Tukulti-Ninurta I refers to the north side (^{IM}il-ta-ni) of the ziggurat of Adad he claims to have repaired (RIMA 0.78.3, 22; 0.78.4, 7; 0.78.5, 72). Similarly, Aššur-bēl-kala uses ^{IM}SI.SÁ to denote the north side of the palace storehouse he built (RIMA 0.89.7 V, 4–5). In first-millennium inscriptions, kings such as Sargon II, Sennacherib, and Ashurbanipal frequently reference north and south when describing building facades (e.g. RINAP 2.92, 4; RINAP 3/1.2, 51; RINAP 5/2.173 IV, 11').¹⁷ East and west also appear regularly in formulaic phrases, especially in the inscriptions of Sennacherib, Ashurbanipal, and Tiglath-Pileser III. A typical example is: *malkī ša kibrāti arbātīm ultu šitāš adi šillān šēpū'a ušakniš*, ‘kings of the four shores, from sunrise to sunset, he (Aššur) put at my feet’ (RINAP 3/1.37, 10–13; author’s translation). Here, sunrise and sunset represent east and west, marking either the boundaries of the known world or the origins of specific countries or rulers (RINAP 1.47 obv., 3–4). However, as in Hittite, kings are never described as ‘going west’, nor do enemies come ‘from the north’, as in Jeremiah 6. Instead, the king advances toward *bīt yakīn* (RINAP 3/1.17 III, 82–84) or into the land of Tabal (RINAP 4.1 III, 47–56).

This is understandable from both a literary and epistemic perspective: abstract directions like north or south evoke no concrete imagery in the reader’s mind.¹⁸ Moreover, such directions are

⁷ Kryszewski 2014; Kryszewski 2016, 21–27.

⁸ As already noted by de Roos 1990, 87–88; cf. also Brosch 2014, 272–273.

⁹ Recopied in Horowitz 1988, 152 fig. 2.

¹⁰ Horowitz 2011, 20–42.

¹¹ Mesopotamian expressions of globality are by no means restricted to the sun and the winds: the Tigris and Euphrates and their banks, the upper and the lower sea, and other geographical features also frequently feature in statements about where in the world something is, but are of no concern to us here, cf. e.g. Wiseman 1991, 485–487; Horowitz 2011, 204–205, 324–325.

¹² Wiseman 1991, 485–486.

¹³ From the wind rose tablet and other texts as well as archaeological and climatological considerations (Neumann 1977, 1051–1054), it is clear that the winds are rather southeast, southwest, northwest, and northeast winds. As compass points they therefore include a 90° angle to the right of the respective wind direction, cf. the diagram in Horowitz 2011, 200.

¹⁴ Jiménez 2013, 211–214.

¹⁵ Jiménez 2013, 420–445.

¹⁶ Jiménez 2018, 319–336. See also Wiggermann 2007, 127–134.

¹⁷ The situation is similar for the Neo-Babylonian royal inscriptions, although that is perhaps less surprising because building activities are almost all they are concerned with.

¹⁸ That this is, in fact, a question of narrative style and not a sign of general disinterest in cardinal directions

not particularly helpful for orientation unless the reader is already very familiar with the location being referenced—a far more challenging task in a world without easy access to top-down maps. It makes sense, then, for kings to specify where a facade faces or on which side of the city of Aššur something is located, as a scribe or later king reading the inscription would likely be familiar with the architecture and layout of the capital. When recounting campaigns or other exploits of a king, however, the names and descriptions of places offer the reader a tangible reference point—one that is often a significant subject in the narrative. This is more informative and likely more relevant than simply stating that something happened ‘east’ or ‘west’ of a particular location.¹⁹

To the best of my knowledge, the only instance in the Assyrian annals where a cardinal direction is explicitly mentioned occurs in Esarhaddon’s note: ‘Venus, the brightest of the stars, (...) was seen in the west’ (MUL.DIL.BAD *na-baṭ* MUL.MEŠ *ina* IM.MAR.TU (...) *in-na-mir*; RINAP 4.57 I, 11’–II, 2). Again, this is unsurprising, as celestial divination is a genre that greatly emphasizes the precise location of events in the sky. The vastness of the nocturnal sky allows for a top-down—or rather bottom-up—perspective, and the need for accuracy in astronomy and astrology makes cardinal directions much more practical when describing celestial phenomena.²⁰ J. de Roos was the first to attempt a systematic analysis of the evidence for cardinal directions in Hittite translations of celestial divination texts, as well as in Hittite bird oracles and some other genres. However, he acknowledged that the available evidence was limited. He summarized his findings in the following table:²¹

Table 1. De Roos’s list of terms for cardinal directions.

	Sumerian	Akkadian	Hittite	Hieroglyphic Luwian
Eastwind/East	IM KUR.RA	IM ŠADU	... <i>n|i</i>	<i>kištaman</i>
Southwind/South	IM GAL = IM GĀL.LU IM U ₁₉ .LU	IM ŠUTU	?	?
Westwind/West	IM MAR.TU	IM AMURRŪ	ŠÚ.A ʰUTU- <i>aš</i> <i>ṣipattarma</i>	<i>ipaman</i>
Northwind/North	IM SI.SÁ	IM ELTANU	<i>tar(š)mena/i</i> or <i>ḫašmena/i</i>	?

De Roos’s valuable research demonstrates that, as in Mesopotamia, Hittite texts rely on two key reference points for global orientation: the position of the sun and the direction of the wind. It also highlights how the frequent use of Sumerian and Akkadian terms often obscures the presence of Hittite words and the underlying Anatolian concepts. So far, we have known only the

is shown by both the fact that a whole people was associated with a cardinal direction (*amurru*) and documentary evidence such as house descriptions in Neo-Babylonian contracts, which make ample use of cardinal directions to describe buildings (Baker 2014, 14–18).

¹⁹ There may be one instance in which a Hittite king uses a cardinal direction to locate lands, in §3 of the Anitta Text, but that is debatable (see below).

²⁰ Rochberg-Halton 1988, 51–57.

²¹ De Roos 1990, 95. Earlier lists of (assumed) directions with roughly the same terms can be found in Hoffner 1967a, 35 and Riemschneider 2004, 217–218.

Hittite spelling for ‘north’, though its precise meaning has remained unclear, and interpretations of the logogram IM GAL for ‘south’ have been inconsistent. I will now reexamine the relevant tablets and several celestial omen texts to revise and expand the Hittite column of Table 1.

The sun as an indicator of cardinal directions

Mesopotamian terms for sunrise and sunset are numerous, but in Hittite texts, there appears to be only one relevant passage that uses Mesopotamian terminology, found in a text associated with the cult of the storm god of Nerik.

KUB 36.90 rev., 35’–36’:²²

rev. 35’ IŠ-TU ŠÉ-E-ET dUTU-aš e-ḫu ŠÚ.A¹ [dUTU-aš]

rev. 36’ e-ḫu

‘Come from sunrise, come (from) [sun]set!’

The couplet forms part of the deity’s evocation, following a line that summons the god from heaven (*nepišaz*) and from earth (*daganzipaz*), wherefore ŠET dUTU and ŠÚ.A [dUTU] likely refer to the horizontal dimension rather than a temporal span from sunrise to sunset. Unfortunately, it remains unclear what native Hittite expressions lie behind these logograms or whether they were meant to be taken literally, mirroring Mesopotamian phrases. As in the Assyrian examples mentioned earlier, ‘east’ and ‘west’ represent the extreme bounds of the world rather than strict cardinal directions.

In addition, there are three possible Hittite examples in which the sun is used to indicate a direction: one in a fragmentary lunar omen, one in a text belonging to the cult of the storm god of Nerik, and one in the so-called Anitta Text:

KUB 8.30 rev., 19’-22’²³

rev. 19’ [] dEN.ZU-aš ḫi-i-la-aš x[

rev. 20’ [] dUTU-uš-kán ku-i-[

rev. 21’ [-i]t-ta na-at-kán [

rev. 22’ [] dUTU-aš IM-an-za a-r[a-a-i]

‘[...] the moon’s halo [...] the sun ... [...]: [...] ... and [...] the *wind of the sun* will r[ise].’

KUB 36.89 rev., 12–14²⁴

rev. 12^{ib} ma-ra-aš-ša-an-ta-aš-wa an-na-al-a[l]-l[a-a]z²⁵ ḫi-pa-at-tar-ma-ia-an a-ar-ša-aš

rev. 13 d¹⁰ aš-ma-wa-ra-an wa-aḫ-nu-ut nu-wa-ra-an dUTU-i DINGIR-LIM-an ar-ša-nu-ut

URU^{ne-r}[i-ik-ki-wa-ra-an]²⁶

rev. 14 ma-an-ni-in-ku-wa-an ar-ša-nu-ut

‘For[mer]ly, the river Maraššanta flowed westward. But the storm god turned it and let it flow for (or to?) the sun god of the gods. He made [it] flow close to Ner[ik].’

²² Edition: Rieken *et al.* 2015–2016 (author’s translation). Besides the Akkadian omen texts from Ḫattuša, which obviously do not contain Hittite words for sunrise and sunset, the only other attestation of *šet šamši* that I know of is found in KBo 50.81, the fragment of a Hittite letter, but the context in which the term occurs is unclear.

²³ Transliteration and translation by the author.

²⁴ Edition: Haas 1970, 152–153 (author’s translation).

²⁵ If this sign was AZ, its subscript must have been written rather high. For our argument, the exact reading of this word is of no concern.

²⁶ For the restoration see Haas 1970, 152.

KBo 3.22 obv., 11–12²⁷

obv. 11 ^dUTU-az ut-ne-e

obv. 12 [ku-it k]u-it-pát a-ra-iš nu-uš 'ḫu-u-ma-an-du-uš¹-p[át ḫ]u-u[l-la-nu-u]n

‘[Which]ever country rose up *from the sun*, I [d]ef[ea]ted them all.’

All three texts may use the sun as a directional marker, but only the first example is unambiguous—though it is, unfortunately, damaged. This first example is a largely destroyed lunar omen concerning the lunar halo. The phrase *im-an-za a-r[a-a-i]* is found also in the preceding paragraph of KUB 8.30, in KBo 2.19+ rev. IV, 5'/7'.7'/9' and KUB 57.73 rev. IV, 1. It is likely a translation of Akkadian *tibūt* ^{im}xy, ‘rise of wind xy’, where xy typically refers to a cardinal direction. The word before ^dUTU-aš is lost, so it could be a ‘wind of sunrise’, ‘wind of sunset’, or ‘wind of the sun’. Nevertheless, it demonstrates that the sun can indicate direction in non-Akkadian phrases.

The second text uses *ipattarmayan*, ‘westward’. The words *zi-pa-tar-ma* and *zi-pa-tar-ma-ia-an* also appear in bird oracle texts, where these adverbs describe the perching (*tuš-at*) of birds. Related to the rare *ipattarmayan* is the adjective *iparwašši-*, which frequently occurs in bird oracle texts. In Hittite ornithomancy, the sun plays a key role in determining the position or direction of certain birds. Building on earlier observations by A. Archi,²⁸ Y. Sakuma showed that it was important for the augurs if certain birds flew ‘against the sun’ (^dUTU-un).²⁹ This position ‘against the sun’ was apparently so embedded in the mantic repertoire that such birds received the qualifying adjective *iparwašši-*,³⁰ which even before Sakuma’s thorough investigation was interpreted by J. Puhvel³¹ and C. Melchert³² as a Luwian word meaning ‘western’.³³ One Middle Hittite bird oracle text seems to use *iparwašši-* not for a bird, but for the position of the augur, showing that the adjective is not inherently tied to birds.³⁴

Now, if *ipattarmayan* means ‘westward’ and the river changed its course, it is plausible that another directional term is concealed by the phrase ‘for the sun god of the gods’. In his study on the cult of the storm god of Nerik, V. Haas translates *nu-wa-ra-an* ^dUTU-i DINGIR-LIM-an ar-ša-nu-ut as ‘er ließ

²⁷ Edition: Neu 1974, 10 (author’s translation).

²⁸ Archi 1975, 163–165.

²⁹ Sakuma 2009, 230–247.

³⁰ Once *ḫi-pár-wi₅-iš-ša(-)* (KUB 49.39 III, 5).

³¹ Puhvel 1984, 374–376.

³² Melchert 1993, 90.

³³ The proposed etymologies differ. The formation involves the polar suffix **-uó-* (Oettinger 2017, 253–254) and relational *-ašša/i-*, cf. Rieken 2024b. The key question is the origin of the *-r-*. Puhvel 1984, 374–376 proposes an adverb **ipar*, ‘at dusk’, analogous to *kariwariwar*, ‘at dawn’, deriving from an *a*-stem **ipa-* ‘west’, based on the term *ipatarma-* which he divides into **ipa-* ‘west’ and *tarmi-*, ‘peg’, here interpreted as ‘point’. Oettinger 2017, 253–254, modifying Melchert 1993, 90, suggests that the *-r-* stems from **išarwa-*, ‘favorable, right’ (cf. CLuw. *išharway(a)* ‘favorable’), the opposite of **iparwa-* ‘unfavorable, left’. In this case, **ipa-* would not mean ‘west’ but be the same **ipa-* as in Rieken 2024a, where the proposed base meaning is ‘perverted, sinister (?)’. This root underlies CLuw. *ipal(i)-* ‘left hand’ and HLuw. *ibam(i)-* ‘west’. I find Oettinger’s explanation more persuasive, as it does not hinge on the analysis of **ipa-* = west based on a division of *ipatarma-* into **ipa-* + *tarmi-* ‘peg’. Furthermore, it is difficult to reconcile words such as *ipal(i)-* ‘left hand’ with **ipa-* if its base meaning were ‘west’. Such a connection would imply that the cardinal direction, or a more primary meaning such as ‘dusk, gloom’ (proposed by Puhvel 1984, 376 in connection with Greek ζόφος, ‘dusk’), was extended to the simpler concept of ‘left’, which seems unlikely. As I am not an Indo-Europeanist, I refrain from a definitive conclusion. I do want to point out, however, that if the etymology for ‘west, western’ does indeed derive from a more primitive sense of ‘left, left hand’, the default orientation would be towards the north, the one direction where the sun is never visible. This would align with ‘wind rose tablet’ BagM Beih. 2.98, where the writing direction and legends suggest a northern perspective. On the other hand, it would differ from the default orientation implied by the Hittite terms for the winds, as discussed below.

³⁴ KUB 5.22+ Fr.2 obv., 48’ (my gratitude goes to Andrea Trameri for pointing out this passage to me). The text will be edited electronically by A. Trameri for *The Hittite Corpus of Divinatory Texts*.

ihn zum Sonnengott der Götter fließen’.³⁵ Similarly, J. Puhvel notes that this passage about the Halys river is ‘matched’ by the invocation from sunrise and sunset in KUB 36.90 quoted above.³⁶ Ch. Steitler, in his book on the solar deities of Anatolia, considers that this ‘might be a simple reference to the sun as a heavenly body in order to express a cardinal direction’.³⁷ This would be east, as it is not west, and the lower Kızılırmak does not flow south but northeast.

If this is correct, it may offer a clue as to how to translate the phrase ^dUTU-az in §3 of the Anitta Text, whose exact meaning remains debated.³⁸ The old interpretation by E. Neu in his edition, ‘through/with the help of the sun god’, cannot be correct because ^dUTU-az stands in the relative clause.³⁹ The three remaining possibilities are: interpreting it as a cardinal direction,⁴⁰ as an adverbial phrase akin to English ‘under the sun’, i.e., ‘anywhere’,⁴¹ or as a reference to the sun god, perhaps a title for the king.⁴² By itself, ^dUTU-az could denote any direction in which the sun is visible during the day, excluding only ‘north’. If the changed flow of the Halys river is indeed ‘towards the sun’, the second passage may help enlighten the third and support those who translate ^dUTU-az with ‘to the east’.

It is tempting to assume that a reference to the sun god can simply mean ‘east’, but the first example is damaged, and the other two are far from conclusive. There is no other attestation in which ‘sun god of the gods’ can be justifiably translated as ‘east’, and the term is rare overall.⁴³ Moreover, why would the scribe use the title that evokes the preeminence of the sun god of the gods over the pantheon merely to express a direction? The phrase in KUB 36.89 can also be translated as ‘for the sun god of the gods’, not as a paraphrase of a cardinal direction.

In turn, we do not know which direction is meant by ^dUTU-az in the Anitta Text and ^dUTU-aš in the lunar omen. If these phrases are not standard references to ‘east’, we might question whether §3 of the Anitta Text is even referring to countries in a specific direction at all. Arguably, giving the rebellion a religious dimension is what we expect from Mesopotamian *res gestae* texts. ^dUTU-az might indeed refer to the sun god, like the phrase in KUB 36.89.⁴⁴ Alternatively, it might fulfill a role like the references to ‘east and west’ in Assyrian annals mentioned above, i.e., underscore the vastness of Anitta’s victory.

Note that in the three examples and the comparative material from the bird oracles, we find four different grammatical cases: the dative-locative in the text about the storm god and the river, the ablative in the Anitta Text, the genitive in the lunar omen, and the accusative in the bird oracles. This suggests that the sun was likely used as a reference point for orientation, but there is no evidence so far of a phrase that universally denotes a cardinal direction independent of the observer’s position relative to the sun.

As a result, the lexical evidence from texts that use the sun as an orientation point is sparse. The only somewhat secure non-Mesopotamian term is *iparwašši-*, a Luwian word for ‘western’, along with its related adverbial forms. Beyond this, we can only conclude that the sun was used to indicate direction, though it remains uncertain whether specific cardinal points were expressed

³⁵ Haas 1970, 153.

³⁶ Puhvel 1984, 375–376.

³⁷ Steitler 2017, 461.

³⁸ For a concise summary of the positions see Steitler 2017, 218–219.

³⁹ Already Melchert 1977, 159, see CHD P, 215.

⁴⁰ Starke 1977, 94–95 (south); Hoffner 1997, 183 with n. 6; Haas 2006, 29 (east).

⁴¹ Klingler 2005, 140 with n. 6; Beckman 2006, 217.

⁴² Melchert 1977, 159; Carruba 2003, 23, 98.

⁴³ Laroche 1965, 34.

⁴⁴ Carruba 2003, 98. Whether we have to identify the king with the sun god here is another question.

in Hittite through references to the sun. If more evidence comes to light, however, these passages will warrant reevaluation.

Cardinal directions using wind names

Hittite literature inherited the Sumerian wind names ^{IM}U₁₉.LU, ^{IM}SI.SÁ, ^{IM}KUR.RA, and ^{IM}MAR.TU for south, north, east, and west, respectively. They are found in the same prayer to the storm god of Nerik in which we find *ŠET* ^dUTU and *ŠÚ.A* ^dUTU:

KUB 36.90 rev., 39'–41'⁴⁵

rev. 39' ^{IM}MAR.TU [^I]^{MSI}

rev. 40' ^{IM}U₁₉.¹[LU ^{IM}KUR.R]A *IŠ-TU 4 hal-hal-tu-ma[r-r]a-aš*

rev. 41' ^Ie¹-[*hu*]

‘Co[me] (from) the west, the [n]orth, the so[uth], the [east], from the four c[orn]ers!’

Here, too, the winds serve as a merism, symbolizing the entirety of the world from which the deity is summoned. The terminology is either Mesopotamian or, at the very least, expressed through Mesopotamian logograms, as the concept of the four corners of the world is a fundamental element of Mesopotamian cosmology.⁴⁶

Beyond Akkadian texts, there are scarcely any additional examples apart from the four found in KUB 36.90:

Table 2. Sumerograms and Akkadograms for cardinal directions in Hittite texts.

Cardinal direction	Text ⁴⁷	Spelling in context	CTH-number
^{IM} U ₁₉ .LU ‘south, southern’	DAAM 1.39 rev., 14’	1 ^{NA} ZI.KIN ^{IM} U ₁₉ . ¹ [LU ^(?)] ⁴⁸	527 (cult inventories with descriptions of cult images)
	KBo 30.155 rev.?, 2’–3’	<i>ku-it-ma-an-^Ima¹</i> ^I d ¹ . ^[KU] š <i>kur-ša-aš</i> ^{A-NA} KASKAL ^{IM} U ₁₉ .LU <i>pa-iz-zi</i>	599 (journey of the sacred hunting bag in winter)
	KUB 10.78+KUB 20.25 rev. VI, 7’–11’/1’–5’ (colophon)	DUB 3 ^{KAM} <i>ú-UL QA-TI</i> <i>ma-a-an gi-ma-an-ti i-na</i> ITU 12 ^{KAM} ^d . ^{KUS} <i>kur-ša-aš ša</i> ^d 10 ^{URU} <i>zi-pa-la-an-da a-na</i> KASKAL ^{IM} U ₁₉ .LU <i>pa-iz-zi</i>	599
^{IM} SI(.SÁ)/ <i>ILTĀNU</i> ‘north, northern’	KBo 6.1 obv. I, 14’	^I nu ¹ ^{A-NA} ^d hu-wa-wa [...] ^{GAL} ^{MES} <i>a-ra-iz-zi</i> ^{IM} GAL ^{IM} EL-TA-NU [...]	314 (Gilgameš)
^{IM} MAR.TU ‘west, western’	KUB 8.35 rev., 12’	^I ge-e-la-an-ni ¹ -ma-kán KÁ ^{A-NA} ^{IM} MA[R.T]U <i>ne-ia-an</i>	545 (birth omens) ⁴⁹

⁴⁵ Edition: Haas 1970, 175–183.

⁴⁶ Horowitz 2011, 193–205, 324–325.

⁴⁷ For the sake of brevity and precision, in the tables I only include those fragments that preserve the cited passages, even if they are not the primary or sole fragment of the tablet. The line numbering follows the hand copies. The numbering within the entire text, if deviating, can be found in the cited editions.

⁴⁸ Edition: Cammarosano 2018, 401–415.

⁴⁹ The tablet KUB 8.35 was classified under CTH 545 because its obverse contains birth omens. It continues

The passages from DAAM 1.39 and KBo 30.155+ are the only instances in Hittite texts in which ‘south’ is used to localize something. But we do not know where the southern road is, and in DAAM 1.39 it is not even clear whether this is a ‘cult stele for the south wind’ or a ‘southern cult stele’. In both cases, the context is obscure, and the Hittite reading behind the logogram is unknown. Similarly, the Akkadogram ^{IM}EL-TA-NU ‘north’ in KBo 6.1 and the Sumerogram ^{IM}MAR.TU ‘west’ in KUB 8.35 do not tell us much about their Hittite readings, either. The first is only attested in the Hittite Gilgameš, the second only in KUB 8.35, and the passage KUB 36.90 quoted above. However, there are more examples in Hittite texts where a wind is described with an attribute or paired with logograms different from those noted above:

Table 3. The word ‘wind’ qualified by an attribute or in combination with a logogram in Hittite.

Attribute/designation	Text	Spelling in context	CTH-number
<i>appezziš/appezziyaš</i> ‘last’/‘of the rear’	KBo 2.19+KUB 43.20 rev., 7’–8’/9’–10’	<i>nu ap-pé-ez-zi-ia-aš IM-an-za</i> [a-ra]-i	532 (lunar eclipse omens)
	KUB 57.73 rev. IV, 1	EGIR-iš IM-an-za a-ra-a- ¹ i	532
	KUB 8.35 rev., 16’	n[a-at-ká]n TÜR EGIR IM-ti ne-ia-an	545
<i>aššu-</i> ‘good’	KUB 33.9 rev. III, 10’	<i>aš-š[a-mu-uš ḫe-e-a-mu-uš</i> <i>a-aš-ša-¹mu-¹uš IM^{HL.A}-uš</i> [50]	324 (Telipinu- myth)
<i>ekuna-</i> ‘cold’	KUB 29.11 obv. II, 18	^{IM} <i>e-k]u-ni ne-ia-an</i>	533
	KUB 8.35 rev., 11’	[¹ nu- ¹ ká[n] ge-la-tar <i>e-ku-ni</i> ¹ IM- <i>an-ti ḫé-e-ša-a[n</i>	545
	KUB 8.35 rev., 14’	[¹ na ²¹ -a[t ² g]e-la-tar <i>e-ku-ni</i> IM- <i>an-ti ne-ia-an</i>	545
	KUB 8.35 rev., 17’	[¹ TÜR A-NA <i>e-ku-ni</i> ^(?) ¹ [M-an-ti <i>ne-ia-an</i>	545
<i>ḫatuga-</i> ‘dreadful’	KUB 8.17 obv. II, 4’	<i>na-aš-ma ḫu-wa-an-za ḫa-tu-</i> <i>g[a-aš ki-ša-ri]</i>	534 (solar omens)

with weather omens on the obverse and lunar omens on the reverse.

⁵⁰ Edition: Rieken *et al.* 2009–2012.

lilliwant- ‘fast’	KUB 33.96 obv. I, 13–14	<i>I-N</i> [A ...] li-li-wa-an-du-uš IM- [uš] ⁵¹	345 (song of Ulikkumi)
	KUB 33.106 obv. I, 31’–32’	[<i>I-N</i>]A ĠİR ^{MES} - <i>ka-ma-za</i> KUŠE.SIR ^{HI.A} - uš li-li-[w]a-a[n-du-uš] [] IM ^{MES} ⁵² -uš š[ar-ku-i] ⁵³	345
	KUB 33.106 obv. II, 3–4	[<i>I</i>]-NA ĠİR ^{MES} -KA- <i>ma-za</i> KUŠE.SIR ^{HI.A} - uš li-li-wa-an-du-u[š] IM ^{MES} - uš (?) [šar ¹ -ku-et	345
	KUB 36.7a+KUB 17.7 rev. III, 40’–41’/11’–12’	<i>I</i> -[NA ĠİR ^{MES} -K]A- <i>ma-za</i> KUŠE.SIR ^{HI.A} - uš li-li-wa-an-du-uš IM ^{MES} - uš šar-k[u-et] ⁵⁴	345
	KUB 36.24 obv. II, 6	] [KUŠE.SIR ^{HI.A} -uš li-li-wa-an-du-uš IM ^{HI.A} -uš [šar-ku-e]t ⁵⁵	349 (Teššup-cycle)
šalli- ‘great’	KBo 22.6 obv. I, 26’–28’	GIŠTUKUL ^{HI.A} - <i>e-eš-w[a-ta-kán]</i> šal-li ħu-u-wa-an-ti ħa-tu-ga-i <i>ka-r[i-it-ti ta-ga-u-i] ú-e-^rte¹-ni</i> <i>ták-kán-ta-ri</i> ⁵⁶	310 (šar tamḫāri)
	KBo 6.1 rev. IV, 13’–14’	[<i>nu</i> ¹ A-NA ^d ħu-wa-wa [...] GAL ^{MES} <i>a-ra-iz-zi</i> IM ^{GAL} IM ^{EL-TA-NU} [...]	314 (Gilgameš)
	KBo 2.19+KUB 43.20 rev., 5’–6’/7’–8’	<i>nu-uš-ši-iš-ta</i> GAL IM- an-za I[GI- <i>an-da ša-a-ra] a-ra-i</i>	532
	KUB 29.11 obv. II, 14	<i>nu</i> SI-ŠÚ A-NA IM GAL <i>ne-i-ia-[an]</i>	533
	KUB 8.28 rev., 4’	] šal-li-iš ħu-u-wa-an-[za <i>a-ra-a-i]</i>	535 (astral omens)
šešduwaš ‘of prospering’	KUB 24.3 rev. III, 39’–40’ ⁵⁷	<i>nu še-eš₁₅-du-wa-a[š]</i> IM- an-te-eš¹ <i>i-ia-an-da-ru</i>	376 (hymns and prayers to the sun goddess of Arinna)
tar(a)šmena- ‘?’	KUB 29.11 obv. II, 16	š]I-ŠÚ IM tar-aš-me-ni <i>ne-ia-an</i>	533

⁵¹ The winds are missing in KUB 33.98, which only has GAM-*an* KUŠE.SIR^{HI.A}-uš šar-ku-et (obv. I, 11). Edition: Rieken *et al.* 2009b.

⁵² According to the collation by E. Rieken, IM with space for another sign at the beginning of the line, *contra* Güterbock 1952, 20 n. f.

⁵³ Edition: Rieken *et al.* 2009c.

⁵⁴ Edition: Rieken *et al.* 2009c.

⁵⁵ Rieken *et al.* 2009d.

⁵⁶ Edition: Güterbock 1969, 19–20, restorations following Neu 1995, 4–5.

⁵⁷ Likely also in KUB 24.1 rev. IV, 17 *še-eš-^rdu¹*[-], but the duplicate KUB 24.2 rev., 17’ has]x-iš-ša-wa-aš ħu-u-wa-du-uš.

walliwalli- ‘strong (?)’	HT 25+KUB 33.111, 3–5	IM ^{Hitt.A} -uš <i>wa-al-li-wa-al-li-uš</i> ^d LAMMA-aš <i>i-da-la-u-wa ud-da-a-</i> <i>ar A-NA</i> ^{dÉ-A} KASKAL-ši <i>IGI-an-da</i> <i>pé-e-te-er</i>	343 (myth of the kingship of the god KAL)
KUN ‘sediment’	KUB 8.35 obv., 11’–22’	IM.KUN ^{Hitt.A} <i>KUR-e an-da ka-ri-ia-zi</i>	545
UGU ‘upper’	KBo 33.216 rev., 2–3	] Û A-NA IM UGU <i>ku-ṛi-[-</i>	590 (fragments of dream- and votive texts)
] ^d UTU-aš ‘of the sun’/‘of the sun’s [...]’	KUB 8.30 rev., 22’	] ^d UTU-aš IM-an-za <i>a-r[a-a-i]</i>	533
AN-ḪU-UL-LU ‘destructive wind’	KBo 6.1 rev. IV, 15’–16’	IM ZI-IQ-ZI-QÚ IM ŠU-RU-UP-PU-U IM A-š[A-AM-ŠU-TU] IM AN-ḪU-UL-LU 8 IM ^{MES} -aš-š[i] ‘a-ra ¹ -a-er	314
A-š[A-AM-ŠU-TU] ‘dust storm’	KBo 6.1 rev. IV, 15’–16’	IM ZI-IQ-ZI-QÚ IM ŠU-RU-UP-PU-U IM A-š[A-AM-ŠU-TU] IM AN-ḪU-UL-LU 8 IM ^{MES} -aš-š[i] ‘a-ra ¹ -a-er	314
ŠU-RU-UP-PU-U ‘frost’	KBo 6.1 rev. IV, 15’–16’	IM ZI-IQ-ZI-QÚ IM ŠU-RU-UP-PU-U IM A-š[A-AM-ŠU-TU] IM AN-ḪU-UL-LU 8 IM ^{MES} -aš-š[i] ‘a-ra ¹ -a-er	314
ZI-IQ-ZI-QÚ ‘storm’	KBo 6.1 rev. IV, 15’–16’	IM ZI-IQ-ZI-QÚ IM ŠU-RU-UP-PU-U IM A-š[A-AM-ŠU-TU] IM AN-ḪU-UL-LU 8 IM ^{MES} -aš-š[i] ‘a-ra ¹ -a-er	314

Sentences like *nu SI-ŠÚ A-NA IM GAL ne-i-ia-[an]* ‘Its (the moon’s) horn turn[s] towards a/the great wind.’ (KUB 29.11+ obv. II, 14) or *n[a-at-ká]n TÜR EGIR IM-ti ne-ia-an* ‘And (the halo) turns towards a/the rear wind.’ (KUB 8.35 rev., 16’) show that there are winds other than the traditional Mesopotamian ones that are used to indicate direction.

This is most obvious in the only surviving bilingual text featuring wind names, KUB 29.11+. In the Akkadian column obv. I, 14.16.18.20, the Akkadian or Sumerian wind names must have stood but are now lost. KUB 29.11+ has three duplicates, KBo 13.20, KUB 8.6, and KUB 8.12, neither of which preserve the Akkadian passage in question, but which show neatly that KUB 29.11+ runs mostly parallel to the Emar tablets published by D. Arnaud as Emar 6.651A-D,⁵⁸ as already noted by H. G. Güterbock.⁵⁹ In addition, it is clear by now that it is also closely paralleled by the first-millennium manuscripts of Tablet V of the series Enūma Anu Enlil.⁶⁰ It contains four omens in which the lunar horns point in different wind directions, two of which are preserved in Hittite:

⁵⁸ Arnaud 1987.

⁵⁹ Güterbock 1988, 160–164.

⁶⁰ The first line of the text was already identified by Riemschneider 2004, XXXVI with the incipit of Tablet V in the Uruk catalog of EAE.

Text 1**Manuscripts:**

A: KUB 29.11+

B: KBo 13.21+

C: KUB 8.6

D: Emar 6.651A⁶¹ (Msk 731041)

E: Emar 6.651B-D+ (Msk 7480 (Fr.1)+Msk 74204d+ (Fr.2)+Msk 7488e (Fr.3)+Msk 7491h (Fr.4)+74206a (Fr.5))

F: BM 38289+⁶²

§9	If the moon's horn is long towards the south its appearance: Fall of the land of Akkad and [...] šumma Sîn ina nanmurišu qaraššu ana šūti irrik miqitti Akkadî [...]	If you see the moon and its horn tur[ns] towards the great wind and it is long: The land of Akkad and the land of Elam will di[se]. takku ^{ELAM^{KI}} autti nu si-šú A-NA IM GAL neya[n] n=at talukiššan ^{KUR A-GA-TI}
A	obv. I14 ⁶³ BAD 30 ina na-an-mu-ri-šu si-šú 'a ¹ -[na obv. I15 ŠUB URI ^{KI} [	obv. II 14 ták-ku ³⁰ a-ut-ti nu si-šú A-NA IM GAL ne-i-ia-[an] obv. II 15 'na-at ta-lu ¹ -ki-iš-ša-an ^{KUR A-GA-TI} KUR ELAM ^{KI} -ia a-k[i]
B		5' [tá]k-ku ³⁰ 'a-ut-ti ¹ nu s[6' [n]a-at t[a-lu-ki-iš-ša-an]
C		obv. II 14 ták-ku ³⁰ aš a-ut-ti] ne-ia-an ta-lu-kiš-zi obv. II 15 LUGAL KUR URU A-AG- [GA-DĒ] a-ki
D	obv. 16' [B]AD 30 ina na-an-mu-ri-šu si-šú ana ^{16U} .LU GÍD.DA RI.RI.GA URI.MA ^{KI} [63]X	

⁶¹ M. Rutz convincingly argued that the fragments published by Arnaud as Emar 6.651B-D belong to one tablet, including another fragment identified by Rutz (Msk 7488e), cf. Rutz 2013, 234–236. The transliteration given here is based on Arnaud's copies and follows Rutz's tablet reconstruction.

⁶² = Verderame 2002, manuscript Vj. See also the eBL edition: <https://www.ebl.lmu.de/fragmentarium/BM.38289> (accessed 11 December 2024).

⁶³ In the divinatory corpus, the writing URI.MA for Akkad appears only in Emar 6.651 and KUB 29.11+. This seems to be a learned spelling from Emar. In rev. VI, 38 of

E	Fig.1+2 obv. 10' BAD 30 <i>ina na-[an-mu-ri]-šu</i> SI.BI <i>ana</i> ^{IM} U ₁₈ .LU <i>i-ri-ik</i> []		
F	rev. 16 DIŠ 30 <i>ina IGI.LA-ŠÚ</i> SI-ŠÚ <i>ana</i> ^{IM} U ₁₈ .LU []		
§10	If the moon's horn is long towards the north during its appearance: Its enemy will <i>ditto</i> the land of Akkad.		If [you] see the moon and] its [ho]rn turns to the <i>tar(a)šmena-</i> wind and it is long: The enemy will [dest]roy the king of Ak[kad].
A	obv. I 16 BAD 30 <i>ina na-an-mu-ri-šu</i> []		<i>takku</i> 30 <i>au[lti nu s]l-ŠÚ A-NA IM tar(a)šmeni neyan n=at talukišzi</i> LUGAL KUR ^{URU} A-AG-[GA-DĒ] ^U 10KÜR <i>ħarnikzi</i>
C	obv. I 17 URI.MA ^U 10KÜR []		obv. II 16 [s]l-ŠÚ IM <i>tar-aš-me-ni</i> ⁶⁴ <i>ne-ia-an</i> obv. II 17 [^U 10KÜR] <i>ħar-ni-ik-zi</i>
D	obv. 17' [BAD] 30 <i>ina na-an-mu-ri-šu</i> SI-ŠÚ <i>ana</i> ^{IM} SI.SÁ GÍD.DA URI.MA ^{KI} ^U 10KÜR-ŠÚ 'KI'.MI[N]		obv. II 16 <i>ták-ku</i> 30 <i>a-u[lt-ti</i> <i>ne-]a-an na-at ta-lu-kiš-zi</i> obv. II 17 LUGAL KUR ^{URU} A-AG-[GA-DĒ] <i>ħar-ni-ik-zi</i>
E	Fig.1+2 obv. 11' BAD 30 <i>ina</i> KI.[MIN s]I.BI <i>ana</i> ^{IM} SI.SÁ <i>i-ri-ik</i> UR[]		
F	rev. 17 DIŠ 30 <i>ina IGI.LA-ŠÚ</i> SI-ŠÚ <i>ana</i> ^{IM} SI.SÁ []		
§11	If the moon's horn is long towards the east during its appearance: The enemy will dest[roy] the land.		If [you] see the moon and ...] turns [towards the co]ld [wind] and it is lo[ng]: [Someone] will kill [...]. ⁶⁵
	<i>šumma Šin ina nammurīšu qaraššu ana šadī irrik nakru māta idā[kšī]</i>		<i>takku</i> 30 <i>au[lti ... IM ek]uni neyan n=aš talu[kišzi ...] kwiški kwenzi</i>

Msk 731030, a manuscript of UR₅.RA = *ħubullu*, we find ^{GIS}NÁ URI₁.M[A]. In rev. VIII, 17, we find ^{GIS}MÁ URI₁.MA. This spelling also appears in rev. VI, 8 of the SAG = *ilu*-tablet published by Yoshikawa – Matsushima 1980 (EME URI₁.MA ^{KI} = *ak-ka₄-di-tum*). The tablets are of unknown origin but thought to come from Emar (cf. MSL SS 1, 28). In all cases, including the omen text discussed here, it appears in a genitive construction. The .MA might derive from ÚRI, which is used to write the city of Ur and contains an *m-Auslaut*, resulting in ÚRI.MA in the genitive (I want to thank Zs. Földi for suggesting this sign confusion to me). Note, however, that in manuscript D and in the unprovenanced manuscripts in Tokyo, the determinative KI follows .MA, showing that at this point, it must have been understood as part of the name. In any case, it is likely that the originals of the Ḫattuša tablets came from Emar.

⁶⁴ TAR and AŠ are written into each other; maybe the scribe forgot AŠ and added it later.

⁶⁵ The translator (who was likely not the scribe of KUB 29.11+) apparently struggled with the corrupt Akkadian line in KUB 29.11+ and resorted to using an indefinite pronoun.

A	obv. I 18 [B]AD 30 <i>ina na-an-mu-ri-šú</i> obv. I 19 [L ⁰]KUR KUR ⁶⁶ «ID» [		IM e-k]u- ^{ri} ne-ia-an ku]-iš-ki ku-en-zi
C			obv. II 18 <i>ták-ku</i> ^a 30 a-u[t-ti obv. II 19 <i>na-aš ta-lu-</i> [kiš-zi] ku-iš-ki ku-en-zi
D	obv. 18' [BAD 3]0 <i>ina na-an-mu-ri-šú si-šú ana</i> ^{IM} KUR.RA GID.DA ^{L10} KUR KUR <i>i-da-a</i> [k-š]i		
E	Fig.1+2 obv. 12' BAD 30 <i>ina</i> KI.MIN [SI.B]i <i>ana</i> ^{IM} KUR.RA KI.MIN ^{L10} KUR K[UR <i>i-da-ak-š</i> i]		
F	rev. 18 DIŠ 30 <i>ina</i> IGI.LÁ-ŠÚ SI-ŠÚ <i>ana</i> ^{IM} KUR.RA [
§12	If the moon's horn is long towards the west during its appearance: Girra will tear up the land.	If y[ou] s[ee] the moon [... tur]ns [...] and it is l[ong: ...]. There will be [f]ire [in the] la[nd].	
A	<i>šumma Šin ina nanmurīšu qaraššu ana amurri irrik Girra māta igēš</i> obv. I 20 [BAD 30] 'ina na'-[an-mu-ri-šú		<i>takku</i> ^a 30 a[utti ... ney]an n=at t[alukiššan ... p]ahhur ut[niya anda] kiša obv. II 20 [ne-]i]a-an obv. II 21 [] ki-ša
C			obv. II 20 <i>ták-ku</i> ^a 30 a-[ut-ti obv. II 21 <i>na-at t[a-lu-ki-iš-ša-an</i> <i>da ki-ša</i>]] ne-ia-an p]a-ah-hur ut-[ni-ia an-
D	obv. 19' [BAD 30 <i>ina</i>] <i>na-an-mu-ri-šú si-šú ana</i> ^{IM} MAR.TU GID.DA ^a BIL.GI KUR <i>i-ge-</i> <i>eš</i>		
E	Fig.1+2 obv. 13' BAD 30 <i>ina</i> KI.MIN [SI.BI <i>ana</i>] ^{IM} MAR.TU KI.MIN ^a BIL.GI [KUR <i>i-ge-eš</i>]		
F	rev. 19 DIŠ 30 <i>ina</i> IGI.LÁ-ŠÚ SI-ŠÚ <i>ana</i> ^{IM} MAR.TU [

Although he did not know about the Emar tablets yet, H. A. Hoffner first proposed that it was more likely that the lunar horns in the first omen above pointed to a cardinal direction rather than to ‘a great wind’.⁶⁷ In the manuscript of his omen edition (unfinished due to his death in 1976), K. K. Riemschneider notes the parallels between the protases in KUB 29.11+ and first-millennium manuscripts of Enūma Anu Enlil.⁶⁸ In Mesopotamian lunar omens, the cardinal directions often indicate in which direction an eclipse, the lunar horns, or other celestial phenomena start and end or point. The Mesopotamian tradition mentions the south wind usually first when the four winds appear, and it subsequently received the number ‘1’. The most common sequence is south-north-east-west, and both Emar manuscripts and the Neo-Babylonian one follow this pattern. The Akkadian column of KUB 29.11+ is mostly lost in these passages, but KUB 29.11+, albeit being shorter than the Emar manuscripts, follows them so closely whenever a passage is preserved in both that it is not unreasonable to assume that they also had the same sequence of omens with cardinal directions. Based on this assumption, we find IM GAL where we expect a word for south, IM tar-aš-me-ni where we expect a word for north, and]x-ni where we expect a word for ‘east’. These passages are the source for the entries in de Roos’s table above (Table 1). Starting with these presumed equations I will now show that the Hittite equivalents of these logograms for south, north, east, and west are, in the same order, šalliš ḫuwanz (‘the great wind’), tar(a)šmenaš ḫuwanz (‘the tar(a)šmena-wind’), ekunaš ḫuwanz (‘the cold wind’), and appezziš ḫuwanz (‘the rear wind’).

‘The great wind’ (šalliš ḫuwanz): South

In Text 1, IM GAL appears to be a Hittite logogram for ^{IM}U₁₉.LU or Akkadian šūtu. A ‘great wind’ is attested six times:

Table 4: Attestations of ‘the great wind’.

CTH-number	Text	Spelling
310 (<i>šar tamḫāri</i>)	KBo 22.6 obv. I, 26’–28’	šal-li ḫu-u-wa-an-ti (dat./loc. sg.)
341 (Gilgameš)	KBo 6.1 rev. IV, 13’–14’	IM ^{[MEŠ-]uš} GAL ^{MEŠ} -uš ⁱ (acc. pl.)
341 (Gilgameš)	KBo 6.1 rev. IV, 14’	^{IM} GAL (acc. sg.)
532 (lunar eclipse omens)	KBo 2.19+KUB 43.20 rev., 5’/7’	GAL IM-an-za (nom. sg.)
533 (lunar omens)	KUB 29.11 obv. II, 14	IM GAL (dat./loc. sg.)
535 (astral omens)	KUB 8.28 rev., 4’	šal-li-iš ḫu-u-wa-an-[za (nom. sg.)

All attestations are found in translation literature. While the passage in *šar tamḫāri* does not survive in the Akkadian manuscripts,⁶⁹ the Gilgameš passage is known to us in Akkadian. The originals of KBo 2.19+ and KUB 8.28 are lost.

In 1988, H. G. Güterbock first compared KUB 29.11+ with its parallels from Emar and proposed the equation of IM GAL with ^{IM}U₁₉.LU, following Hoffner’s earlier proposal.⁷⁰ While it is possible that KUB 29.11+ had a different order of cardinal directions, both Güterbock and Hoffner point to another text in which IM GAL is found where one expects ^{IM}U₁₉.LU, a scene in the Hittite translation of

⁶⁷ Hoffner 1967b, 357.

⁶⁸ Riemschneider 2004, 218 n. 1.

⁶⁹ Westenholz 1997, 102–139.

⁷⁰ Güterbock 1988, 171.

the Gilgameš epic.⁷¹ Šamaš helps out Gilgameš in his battle against ̕uwawa, who is subsequently attacked by eight winds:

Text 2

Manuscripts:

A: KBo 6.1+ rev. IV, 13'–16'

§22 ⁷²	And he (the sun god) raised the great wind[s] against ̕uwawa: The ‘great wind’, the north wind [...] the storm, the frost wind, the du[st wind], the destructive wind. And the eight winds did rise against hi[m].
	<i>nu</i> A-NA ^d <i>̕uwawa</i> IM ^[MES-<i>uš</i>] GAL ^{MES-<i>uš</i>¹} <i>araezzi</i> IM ^{GAL} [ⁱ] ^{MEL-TA-NU} [...] ^{IM} ZI-IQ-ZI-QÚ ^{IM} ŠU-RU-UP-PU-U IM ^{A-Š} [A-AM-ŠU-TU] ^{IM} AN-̕U-UL-LU 8 IM ^{MES-a=šš[i]} <i>arāer</i>
A	rev. IV 13' <i>nu</i> A-NA ^d <i>̕u-wa-wa</i> IM ^[MES-<i>uš</i>] rev. IV 14' GAL ^{MES-<i>uš</i>⁷³} <i>a-ra-ez-zi</i> IM ^{GAL} [ⁱ] ^{MEL-TA-NU} [rev. IV 15' ^{IM} ZI-IQ-ZI-QÚ ^{IM} ŠU-RU-UP-PU-U ^{IM} A-Š[A-AM-ŠU-TU] rev. IV 16' ^{IM} AN-̕U-UL-LU 8 IM ^{MES-aš-š[i]} <i>'a-ra'-a-er</i>

The last four winds are destructive storms, whereas ^{IM}EL-TA-NU in IV, 14' makes it clear that the first four represent the cardinal directions. In tablet V, line 160 of the Standard Babylonian version, these winds are listed in the sequence south–north–east–west.⁷⁴ In KBo 6.1, we encounter ^{IM}GAL before ‘north’, marking another instance where we would expect ^{IM}U₁₉.LU but instead find ‘the great wind’. Interestingly, in l. 13'–14', all eight following winds are called ‘great’ (GAL), but one among them is still singled out as ‘the great one’. This small awkwardness arose because ^{IM}GAL/^{IM}GAL⁷⁵ is not a Mesopotamian logogram for any wind or direction.

Hoffner proposes that this spelling was a phonetic misreading of ^{IM}GÀL.LU (= ^{IM}U₁₈.LU), which led to ^{IM}GAL.⁷⁶ This idea is taken up by Güterbock, de Roos, A. George, and G. Beckman.⁷⁷ If this is true, there is no bilingual attestation of a Hittite term for the South, and we deal with a botched Sumerogram. In his omen edition, Riemschneider disagrees with Hoffner, rightly pointing out that there is no explanation for the loss of the LU-element of ^{IM}U_{18/19}.LU.⁷⁸ I want to add that the logographic attestations for ‘south’ in ̕attuša always use U₁₉ (URU), which, other than U₁₈ (URU×MIN), does not have the syllabic value gâl. This is supported by the fact that there is not a single attestation in ̕attuša of *NAM.GAL.LU or *DUMU.GAL.LU as variants of the frequently used logograms NAM.U₁₉.LU, ‘mankind, populace’, and DUMU.U₁₉.LU, ‘person, human’. Riemschneider, however, also dismisses the possibility that this was a logogram for ‘south’ on cultural-historical grounds. He assumes that the Hittites used Polaris as the primary reference for orientation. In his view, the

⁷¹ Tablet I, §22 in the most recent edition Beckman 2019. Since only these lines are relevant to our argument and they are only attested once, I will refer to KBo 6.1 during the argument.

⁷² Paragraph numbering following the edition by Beckman 2019, 33–43 (= Rieken *et al.* 2009a, §25''''').

⁷³ Text: iš.

⁷⁴ eBL edition: <https://www.ebl.badw.de/corpus/L/1/4/SB/V> (accessed 10 December 2024). = V, 138 in George 2003, 608.

⁷⁵ In KUB 29.11+, there appears to be a word space between IM and GAL, and there is a clear word space between IM and *tar-aš-me-ni*, implying it is not a determinative. In KBo 6.1, IM appears to be a determinative.

⁷⁶ Hoffner 1967b, 357.

⁷⁷ Güterbock 1988, 171; de Roos 1990, 94–95; George 2003, 812–812; Beckman 2019, 43.

⁷⁸ Riemschneider 2004, 218 n. 2.

omens preceding §9 of KUB 29.11+, which describe the lunar horns pointing skyward or earthward, represent a north-south difference, whereas IM GAL and IM *tar-aš-me-ni-* in §9 and §10 represent the east-west direction.⁷⁹

Riemschneider’s argument that IM GAL might signify east or west must be set aside, as it is based on unverified historical assumptions. Both KUB 29.11+ and KBo 6.1+ suggest it refers to ‘south’ (cf. also the notes in HZL 337). He was, however, right in rejecting that IM GAL is a misinterpreted Sumerogram. Instead, it appears to be a Hittite logogram for *šalliš huwanz*.⁸⁰

The following Texts 3 and 4 support this interpretation. The tablet KBo 2.19+ (Text 3) contains lunar eclipse omens on the obverse and other lunar omens on the reverse. The reverse is duplicated by the fragments KUB 8.8 and 8.9+, though until recently, not a single omen of the reverse had been preserved. A new join of KBo 2.19 with KUB 43.20 by the author now provides us with four almost complete omens, two of which are relevant to the argument:

Text 3.1

Manuscripts:

A: KBo 2.19 (Frg.1)+KUB 43.16 (Frg.2)+KUB 43.20 (Frg.3)

B: KUB 8.9 (Frg.1)+KUB 43.19 (Frg.2)

C: KUB 8.8

§6'	(If) ⁸¹ The moon is <i>aiwant</i> - ⁸² and the great wind rises opposite it, and it (the moon) becomes bright: The land of Elam (B: and the land of [...]) will p[erish]. (<i>takku</i>) ^d 30-aš <i>aiwanz(a)</i> <i>nu=šši=(a)šta</i> GAL IM-anz(a) <i>menaḥḥanda arai n=aš parkuši</i> <small>URU^{ELAM}.MA=ma (B: ṽ KUR D[UR ...]) ḥ[arkzi]</small>
A	Frg.1+3 rev. IV 5'/rev. IV 7' [^d 30-aš a-i]-wa-an-za nu-uš-ši-iš-ta GAL IM-an-za I[GI-an-da] Frg.1+3 rev. IV 6'/rev. IV 8' [ša-a-ra] a-ra-i na-aš p[ár-ku-uš-zi] ⁸³ KUR <small>URU^{ELAM}.MA-m[a ḥar-ak-zi]</small>
B	Frg.1 obv. 11' <i>ták-ku</i> ITU-aš a-[i-wa-an-za Frg.1 obv. 12' <i>me-na-aḥ-ḥa-[an-ta</i> Frg.1 obv. 13' ṽ KUR D[UR] ⁸⁴

⁷⁹ Riemschneider 2004, 217.

⁸⁰ Riemschneider 2004, 218 n. 2.

⁸¹ *Takku* or any other introductory conjunction was likely absent in KBo 2.19+ rev., which does not have them on the obverse, either.

⁸² The meaning of *aiwant*- remains uncertain. Tischler 2008, 12 suggests it means ‘bright’, but I find this unlikely. The new join (KBo 2.19+KUB 43.20 rev. IV, 5'–6') and its fragmentary duplicate (KUB 8.8 obv. 1'–2') now provide a complete omen: (*takku*) ^d30-aš *ištarna dankuiš araḥzanda=ma parkuiš* LUGAL KUR URU^{ELAM}.MA^{KI} BA.ÚŠ, ‘(If) the moon is dark on the inside but bright on the outside: The king of Elam will die’. This shows that *parkui-* is used to describe a bright moon. *aiwant*- also appears as an attribute of a liver mark (likely the *š/zihḥu*) in KBo 10.7+, which narrows the possible meanings. Both KBo 2.19+ and KBo 10.7+ use *dankui-* for dark and *sig./ḥaḥlawant-* for ‘green’, and KBo 2.19+ uses *parkui-* for ‘bright’. Based on this, I tentatively propose that *aiwant*- is a word for ‘red’, as these four colors are used for both the moon and the *š/zihḥu* in Mesopotamian omen texts. A term for ‘red’ is so far notably absent in the Hittite omen corpus.

⁸³ Text: *ši*. This could be a mistake or an idiosyncratic variant, see n. 85 below.

⁸⁴ Where we expect NIM or E, we find the beginning of what was likely the sign DUR. The only commonly attested place name in Hittite texts that begins with DUR is Durmitta, which, if Kryszew 2016, 343–376 is correct, lies to the northwest of Ḫattuša. In the astral omen KUB 34.16 obv. II, 9' we find -t]a-aš KUR-aš *ḥar-ga-aš*, shortly after an omen about the Hittite city Yaḥala, as found in its duplicate (KUB 8.14 obv. 1', 11'). This could be the end of *dur-mi-it-t]a-aš*. There are two further examples of replacing

C	obv. 3' <i>ták-ku</i> ITU- <i>aš a-i-wa-an-za</i> [obv. 4' <i>me-na-aḥ-ḥa-an-ta a-ra-ṛa¹-[i</i> obv. 5' <i>nu-kán</i> KUR ^{URU} ELAM.MA <i>ḥ[ar-ak-zi]</i>
§7'	(If) The moon's [horn] becomes grown ⁸⁵ (B: If the moon shi[nes ...]) and the rear wind rises, and it (the moon) becomes bright: The land of Amurru will perish. [SI ^d 30- <i>a</i>]š <i>miyantešši nu appezziyaš</i> IM- <i>anz(a) [ara]i n=aš parkuezzi</i> KUR ^{URU} MAR.TU <i>ḥarkzi</i>
A	Frg.1+3 rev. IV 7'/rev. IV 9' [SI ^d 30- <i>a</i>]š (erasure) <i>mi-an-te-eš-<šši> nu ap-pé-ez-zi-ia-aš</i> IM- <i>an-za</i> Frg.1+3 rev. IV 8'/rev. IV 10' [<i>a-ra</i>]- <i>i na-aš pár-ku-*ez*-zi</i> KUR ^{URU} MAR.TU <i>ḥar-ak-zi</i>
B	Frg.1+2 obv. 14/1' <i>ták-ku</i> ITU- <i>aš mi-iš-[ri-u-e-eš-zi^(?)</i> Frg.1+2 obv. 15/2' <i>ṛa¹-ra-a-i na-aš</i> [

The wind names only became clear after the join with KUB 43.20. The spelling GAL IM-*an-za* follows the Hittite attribute word order, confirming that this is not a misspelled Sumerogram. The first omen further supports that *šalliš ḥuwanz* means 'south': The rise of the 'great wind' relative to the position of the moon heralds the downfall of Elam. That this is not a coincidence is shown by §7, in which the rise of the 'wind of the rear/rear wind' foretells the downfall of a different country, Amurru.

In Mesopotamian celestial divination, Elam is associated with two winds: the east and the south, with the southern association being found especially but not exclusively in Old Babylonian.⁸⁶ The 'great wind' in Text 1 is connected to the fall of Akkad and Elam. In Mesopotamian divination, Akkad is connected either with the south or the north but never with the east.⁸⁷ If Elam can be south or east, and Akkad north or south, their co-occurrence in that omen suggests that the 'great wind' indeed corresponds to ^{IMU}_{18/19}.LU.

In another omen text (Text 4), we find a fully syllabic spelling:

Text 4

Manuscripts:

A: KUB 8.28

§2"	[I]f in the ninth month [...]: The great win[d will rise]. [<i>ta</i>]kku= <i>za</i> I-NA ITU 9 ^{KAM} [...] <i>šalliš ḥūwan[z(a) arai]</i>
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Mesopotamian place names: In KUB 29.9 rev. IV, 12', the scribe translates ^{L0}S[U.BIR₄^{KI} *i-ma-at*] (KBo 13.27+, 11') with Hittite LÚ ^{KUR}*hur-la-aš a-ki* 'The Hurrian will die'. In KUB 8.35, we find Ḫatti where we expect Akkad.

⁸⁵ The following omen in KBo 2.19+ reads [s]ṛ ^d30-*aš mi-ia-an-te-eš-ši*. Like *pár-ku-uš-ši* in Frg.1+3 rev. IV 6'/rev. IV 8' and *ma-uš-ši* in Frg.1+3 rev. IV 10'/rev. IV 12', this must be a 3sg. prs., not a 2sg., despite what the morphology suggests. It is likely built from the participle *mīyant-* + *-ešš-*, as we would not expect a plural participle with the enclitic =*šši* in this context. If we do not wish to accuse the scribe of making the same mistake thrice in a row, we could assume that he unexpectedly used the *ḥi*-conjugation ending *-i* for all three verbs ending in *-š* here. However, it is worth noting that the obverse of KBo 2.19+ contains a relatively high number of scribal slips, such as 4, 5, and 6 for 14, 15, and 16, and once KA for ŠA when *-g/ka-* should be the next syllable.

⁸⁶ Rochberg-Halton 1988, 59.

⁸⁷ Rochberg-Halton 1988, 53–54.

A	rev. IV? 4' [tá]k-ku-za I-NA ITU 9 ^{KAM} [
	rev. IV? 5' šal-li-iš hu-u-wa-an-[za a-ra-i]

The obverse of KUB 8.28 contains rain omens, while the reverse features omens of an unclear type. Based on the colophon, these are likely lunar or solar eclipse omens. The spacing in line 5' on the reverse implies that *šalliš hūwan(z)a* is the last or perhaps even the only apodosis. Riemschneider suggests a meaning 'ein schwerer Sturm', which is possible, but I propose a different interpretation. In KUB 57.73 rev. IV, 1 we find the apodosis EGIR-iš IM-an-za a-ra-a-¹i 'the rear/last wind will rise', in KUB 8.30 rev., 22' we find ^dUTU-aš IM-an-za a-r[a-a-i] 'the sun's wind will rise'. Neither of the two terms has a literal equivalent in Akkadian celestial divination, and since 'a rear wind' and 'sun's wind' are also absent from non-divinatory Hittite vocabulary, I find it more likely that Text 4 is a translation of an Akkadian apodosis *tibūt šūti* 'rise of the south wind'. This type of apodosis occasionally appears in Akkadian celestial omen texts (cf. Emar 6.651A/Msk 731041 rev., 19: BAD *ina šà TÜR pí-ir-su ana 3 pa-ri-is ti-bu-ut* ^{IM}U₁₉.LU 'If in a halo an opening is opened threefold: Rise of the south wind').

Lastly, there is the passage KBo 22.6 obv. I, 26'–28' of the *šar tamḫāri* epic: ^{GIŠ}TUKUL ^{BI.A}-e-eš-w[a-ta-kán] šal-li hu-u-wa-an-ti ha-tu-ga-i ka-r[i-it-ti ta-ga-u-i] ú-e-¹te¹-ni ták-kán-ta-ri '[Your] weapons are like the great wind, the dreadful fl[ood,⁸⁸ the swollen] water'. Here too, a translation 'the south wind' can at least be considered. Although this passage is not preserved in Akkadian,⁸⁹ the description aligns well with Mesopotamian depictions of the south wind as sometimes violent and dangerous.⁹⁰ For example, in the story of Adapa and the South Wind, this wind blows fiercely and sinks Adapa's boat (*šūtu iziqamma yāši uttebbanni*, 'the south wind blew and sank me').⁹¹ That said, there is no definitive reason to translate *šalliš hūwan(z)a* as 'south wind' in this context. In the Akkadian solar omen tablet KUB 4.63 obv. II, 2', the word ^{IM}meḫû, 'storm', appears, which KUB 8.17 obv. II, 6' and KUB 34.13 obv.?, 9' both translate with *šalliš* [...]. The substantive is lost, but *hūwan(z)a* is the first word that comes to mind.⁹²

So, whereas there are instances in which *šalliš hūwan(z)* can mean 'a strong wind', in four out of six cases, a translation 'south wind' seems more likely.

The *tar(a)šmenaš*-wind: North

Except for the logogram ^{IM}SI in KUB 36.90 cited above, words for 'north' barely appear in Hittite texts:

Table 5. Attestations for 'north' in Hittite.

CTH-number	Text	Spelling
341 (Gilgameš)	KBo 6.1 rev. IV, 14'	[¹] ^M EL-TA-NU (acc. sg.)
533 (lunar omens)	KUB 29.11 obv. II, 16	IM <i>tar-aš-me-ni</i> (dat./loc. sg.)
534 (solar omens)	KUB 8.21, 11	]-az hu-wa-an-da-az (abl. sg.)

⁸⁸ Thus Güterbock 1969, 22. The restoration of *ta-ga-u-i* follows Neu 1995, 4–5.

⁸⁹ Westenholz 1997, 102–139.

⁹⁰ Wiggermann 2007, 133–134.

⁹¹ Izre'el 2001, Fragment A, 52'. Author's translation.

⁹² *Contra* Riemschneider 2004, 85, who compares KUB 4.63 obv. II, 2' with 8.17 obv. II, 4', i.e., with the preceding omen, which contains *hu-wa-an-za ha-tu-g[a-aš]* in the apodosis. While this is a fitting translation for *meḫû*, the sequence of omens in KUB 4.63, KUB 8.17, and KUB 34.13 makes it clear that this must instead be the translation of the omen preceding KUB 4.63 obv. II, 1', which is now lost.

In Gilgameš, the name is written with an Akkadogram. In the solar omen text KUB 8.21, 11, the name is lost except for the ending. We only know this was a word for north thanks to the Akkadian original text, which has]^msi.s[Á (KUB 37.152 rev. IV?, 1').

In §10 of Text 1 above, we find IM *tar-aš-me-ni* in the Hittite column and]^msi.sÁ in the texts from Emar and the first millennium. De Roos rightly takes this as the word for ‘north’. *tar-aš-me-ni* is, as far as I can see, only attested here,⁹³ and its literal meaning is therefore unclear. Based on its form and by analogy with GAL IM for ‘south’, we can assume that it is an adjective,⁹⁴ likely an *a*-stem. Given the lack of other attestations, the word might also be read *haš-aš-me-ni* or *haš^{as}-me-ni*,⁹⁵ with *tar* chosen here because it is statistically the more common CVC-value in Hittite.⁹⁶ E. Laroche and J. Tischler propose that the second element is *meni/a-*, ‘check, face, side’, analogous to *udumeni* in KUB 8.34 rev. III, 12.⁹⁷ C. Brosch proposes that these are imperative composites, literally meaning ‘dry the face!’ and ‘wet the face!’, thinking of north and south.⁹⁸ Both ideas are based on the same incorrect reading of *šāru udumeni*, ‘we will carry away plunder’, a translation of the common Akkadian phrase *šallata ušēšši*, as *šA-A-RU udumeni iya[ttari* ‘the *udumeni*-wind will bl[ow’ in KUB 8.34 rev. III, 12. It is still possible that the second element is *meni-*, but without further attestations, this remains uncertain.

We lack an analogous attestation like for the ‘great wind’ in Gilgameš. However, a comparison of the apodoses of KUB 29.11+ and Emar 6.651 shows that they are the same despite some damage and variations. It is conceivable that the sequence of the entire omens could differ between manuscripts. But it seems unlikely that the apodoses remained the same while the cardinal directions in the protases changed. In the apodosis, the king of Akkad is defeated. Akkad is mostly associated with the north and south, rarely with the west in Akkadian celestial divination. As ‘south’ is likely IM GAL, a meaning ‘to the north’ for *tarašmeni-* is highly probable.

The ‘cold wind’ (*ekunaš huwanz*): East, and the ‘rear wind’ (*appezziš/appezziyaš huwanz*): West

The bilingual tablet KUB 29.11+/Text 1 is mostly broken after the entries for south and north. However, as already shown in Table 3 above, only three additional winds are used in the directional sense of ‘to, towards’:

⁹³ Cf. also Tischler 1991, 153. In KBo 2.19+, Frg.1+3 rev. IV 9'–10'/rev. IV 11'–12' we find *tar-ma-aš me-na-aḫ-ḫa-[an-da]* in the protasis following the two omens with the ‘great’ and ‘rear’ wind in the protasis. The apodosis predicts the fall of Akkad, after the preceding two predicted the fall of Elam and Amurru. It is tempting to associate the sign sequence *tar-ma-aš-me-na* with *tar(a)šmeni* in KUB 29.11+, especially because this seems possible judging from the word space. However, IM is absent, we would be left with a word starting with *aḫ-ḫa-*, and *tarmaš* is a known Hittite word meaning ‘peg’. I therefore assume this refers to a constellation of stars (Sirius?) rather than a wind.

⁹⁴ Güterbock 1988, 172.

⁹⁵ Laroche 1952, 22.

⁹⁶ In agreement with Tischler 1991, 153.

⁹⁷ Laroche 1952, 22; Tischler 1991, 153.

⁹⁸ Brosch 2014, 273.

Table 6. Possible words for east and west in Hittite.

Attribute/designation	Text	Spelling in context	CTH-number
<i>appezziš/appezziyaš</i> 'last'/'of the rear'	KBo 2.19+ KUB 43.20 IV, 7'–8'/ rev. IV, 9'–10'	<i>nu ap-pé-éz-zi-ia-aš IM-an-za</i> [a-ra]-i (nom. sg.)	532 (lunar eclipse omens)
	KUB 57.73 rev. IV, 1	EGIR- <i>iš</i> IM-an-za a-ra-a- ¹ i ¹ (nom. sg.)	532
	KUB 8.35 rev., 16'	n[a-at-ká]n TÜR EGIR IM-ti ne-ia-an (dat./loc. sg.)	545 (birth omens)
<i>ekuna-</i> 'cold'	KUB 29.11 obv. II, 18	IM <i>e-k</i>]u-ni ne-ia-an (dat./loc. sg.)	533
	KUB 8.35 rev., 11'	¹ nu ¹ -ká[n] ge-la-tar <i>e-ku-ni</i> ¹ IM'-an-ti hē-e-ša-a[n] (dat./loc. sg.)	545
	KUB 8.35 rev., 14'	¹ na ² 1-a[t ² g]e-la-tar <i>e-ku-ni</i> IM-an-ti ne-ia-an (dat./loc. sg.)	545
	KUB 8.35 rev., 17'	¹ TÜR A-NA <i>e-ku-ni</i> ^(?) i[M-an-ti ne-ia-an (dat./loc. sg.)	545
UGU 'upper'	KBo 33.216 rev., 2–3	] Ū A-NA IM UGU ku- ¹ i ¹ -[(dat./loc. sg.)	590 (fragments of dream- and votive texts)

If my restoration in §11 of Text 1 is correct, then Emar 6.651 and the first-millennium texts have ¹M_{KUR.RA}, where KUB 29.11+ has IM *e-k*]u-ni. In this case, 'the cold wind' would correspond to 'east'. This suspicion uttered by Riemschneider on purely geographical considerations⁹⁹ gains support from another text, KUB 8.35, a tablet containing birth, astral, and lunar omens, which has been edited and discussed in detail by J. Fincke.¹⁰⁰ While both Güterbock's and Riemschneider's editions of KUB 29.11+, as well as Fincke's edition of KUB 8.35, discuss the wind directions mentioned in their texts, neither of the authors take the other tablet into account in that discussion.¹⁰¹

Text 5

Manuscripts:

A: KUB 8.35

⁹⁹ Riemschneider 2004, 218 n. 4. Note, however, that he still considers the term to mean 'north' (199).

¹⁰⁰ Fincke 2004. An earlier edition can be found in Riemschneider 2004, 103–106.

¹⁰¹ My work on the tablets is part of the DFG long-term project *The Hittite Corpus of Divinatory Texts*, led by Birgit Christiansen, Enrique Jiménez, and Daniel Schwemer (https://www.assyriologie.uni-muenchen.de/forschung/hittite_divinatory_texts/index.html, accessed 11 December 2024). A new edition of the lunar omen tablets from Ḫattuša is in preparation.

§2''	<p>If the moon is surrounded (thrice)¹⁰² by a [h]al[o] and one halo is ope[n] towards the cold wind, [...], but the gate in one halo turns we[s]t: The king of Šubartu will [open] hostilit[ies] against the king of A[murru]. The weapons of the king of Šubartu will be [dread]ful against the lan[d of Amurru]. Nothin[g will happen] to the king of Elam and the king of Ḫatt[i].</p> <p><i>mān</i> ^d30 [g]e[l]at[ar] <i>kizzi nu=ka[n] gelatar ekuni</i> IM-anti <i>ḫēša[n ...] ... [...] gēlanni=ma=kan</i> KÁ A-NA ^{IM}MA[R.T]U <i>neyan</i> LUGAL ^{KUR}ŠU-BAR-TI A-NA LUGAL ^{KUR}A-[MUR-RI] ^{LÚ}KÚR-ann[i <i>dāi nu</i>] ŠA LUGAL ^{KUR}ŠU-BAR-TI ^{GIŠ}TUKUL ^{HI.A}KU ^RA-MUR-RI <i>ḫatukišš</i>]anzi LUGAL ^{KUR}ELAM.MA Û LUGAL ^{KUR}KÙ.BABBAR-t[i <i>ú</i>]-UL <i>kwitk[i kišari]</i></p>
A	<p>rev. 11' <i>ma-a-an</i> ^d30 [g]e-[l]a-t[ar] 'ki-zi-zi nu¹-ká[n] <i>ge-la-tar e-ku-ni</i> ^{IM}1-an-ti <i>ḫé-e-ša-a[n</i>] <i>x-t[a</i>]</p> <p>rev. 12' <i>ḡe-e-la-an-ni¹-ma-kán</i> 'KÁ A¹-NA ^{IM}1MA[R.T]U <i>ne-ia-an</i> LUGAL ^{KUR}ŠU-BAR-TI A-NA LUGAL ^{KUR}A-[MUR-RI] ^{LÚ}KÚR-an-[ni <i>da-a-i</i>]^{(?)103}</p> <p>rev. 13' [<i>nu</i>] ŠA LUGAL ^{KUR}ŠU-BAR-TI ^{GIŠ}TUKUL ^{HI.A}KU ^RA-MUR-RI <i>ḫa-tu-ki-iš-š</i>]a-an-zi LUGAL ^{KUR}ELAM.MA Û LUGAL ^{KUR}KÙ.BABBAR-t[i <i>ú</i>]-UL <i>ku-it-k[i ki-ša-ri</i>]^{(?)104}</p>
§3''	<p>[I]f the m[oon] is surrounded (thrice) by a halo an[d one h]alo turns towards the cold wind and one halo [has no gate] ... t[urns ...]: The weapons of the king of Elam will be dreadfu[l] against the king of Ḫatti.</p> <p>[<i>m</i>]ān=za ^d[30] <i>gelatar kizzi n=a[t g]elatar ekuni</i> IM-anti <i>neyan</i> A-NA 1 TÛR=ma=k[an KÁ NU.GÁL] ... n[eyan š]A LUGAL ^{KUR}ELAM-MI=kán ^{GIŠ}TUKUL ^{HI.A}A-NA LUGAL ^{KUR}ḫatti <i>ḫatukiššanz[i]</i></p>
A	<p>rev. 14' [<i>ma-a</i>]-an-za ^d[30] 'ge-la¹-tar 'ki-iz-zi na¹-a[t g]e-la-tar e-ku-ni IM-an-ti <i>ne-ia-an</i> A-NA 1 TÛR-ma-k[án KÁ NU.GÁL]</p> <p>rev. 15' <i>x</i>[]<i>x</i> <i>x</i>[]<i>x</i> <i>x</i>[]<i>x</i>-<i>x</i>-<i>x</i>¹⁰⁵ n[<i>e-ia-an</i> š]A LUGAL ^{KUR}ELAM-MI¹⁰⁶-kán ^{GIŠ}TUKUL ^{HI.A}A-NA LUGAL ^{KUR}ḫat-ti <i>ḫa-tu-ki-iš-ša-an¹-z[i]</i></p>

¹⁰² The tripartite protasis and the parallel K 2887 suggest that this omen refers to three halos. The word *gēlatar* for 'halo' is only attested in this text (HW² K, 287). Tischler 2013, 253, based on the typology of errors collected by Rüster 1988, 300, considers it a spelling mistake. In contrast, Fincke 2004, 229–232 argues that this is a genuine *g/h* interchange occasionally found in Hittite, giving Hurrian *kešhi-/gešhi-/ḫišḫi-* as an example. Both agree that this is a variation of **ḫilatar* 'courtyard' (nom.-acc. otherwise unattested). Fincke's explanation of the spelling is convincing and does not need to assume an error like Tischler's. The scribe may have used *ge/ḫilatar* instead of the usual *ḫila-* to distinguish between a single 'yard' and a 'complex of yards', i.e. three halos, by employing the collective-abstract suffix *-tar*. For similar usages cf. Rieken 1999, 380–382.

The verbal form *kizzi* appears only here, too. The usual term is *ḫilaizzi* 'it has a halo'. Fincke 2004, 232 considers a link to ^E*kizzumi-* 'paddock, enclosure', which would make it an equivalent of *ḫila-* (Fincke 2004, 232 n. 44). A potential verb *kiz-/kez-* would thus be an equivalent of *ḫilae-*. Tischler 2008, 86 considers this to be a newly built active *mi-*form of *ki-* 'to lie, to be placed', with the meaning 'to lie around, to surround'. In this case, we have to assume *gēlatar* is the transitive subject. As abstracts in *-tar* are usually neuter, we would expect the ergative suffix *-ant-* (Hoffner – Melchert 2008, 57–58). As the verb replaces the intransitive *ḫilaizzi*, it is likely still intransitive in meaning, the moon being the subject. It could still be a specially built form of *ki-* for this particular purpose. The matter must remain undecided here, as both Fincke and Tischler have plausible proposals, and the meaning is clear from the context and the parallel K 2887.

¹⁰³ For this restoration see Fincke 2004, 233.

¹⁰⁴ For this restoration see Fincke 2004, 234.

¹⁰⁵ We expect TÛR A-NA EGIR IM-an-ti *ne-ia-an* or the like, but the surface is so broken that no single sign is clearly identifiable on the photographs.

¹⁰⁶ As far as I know, this is the only attestation of ELAM+MI/-MI in Ḫattuša (cf. also Kryszew 2023, s.v.). I assume *-MI* is an Akkadian phonetic complement. However, note that in KBo 2.19+ Frg.1+3 rev. IV 4'/rev. IV 6' the land is once written ^{UR}U^{NE}.MA^{KI}, which may point to a pronunciation [nim-ma] rather than

§4''	[I]f the moon is s[ur]rounded (thrice) by a [h]a[l]o a[n]d one halo turns towards the rear wind, one [h]alo has no gate, and another halo [turns to] the cold w[ind]: The weapons [of the kin]g of Ḫatti will be dreadful against the land of El[am]. [m]ān d30-[aš g]el[ata]r k[i]zzi n[=at=ka]n TÜR EGIR IM-ti neyan 1 [T]ÜR=ma=kan KÁ NU.GÁL TÜR A-NA ekuni i[m-an-ti neyan šA LUGA]L KUR ḫatti=kan GIS-TUKUL HLA A-NA KUR EL[AM-MI] KALA.GA-anzi
A	rev. 16' [m]a-a-an d30-[aš? g]e-l[a-ta]r k[i-i]z- ^r zi ¹ n[a-at-ká]n TÜR EGIR IM-ti ne-ia-an 1 [T]ÜR-ma-kán KÁ NU.GÁL rev. 17' TÜR A-NA e-ku-ni ^(?) i[m-an-ti ne-ia-an šA LUGA]L KUR ḫat ¹ -ti-kán *GIS-TUKUL HLA* A-NA KUR EL[AM-MI] KALA.GA-an-zi

In these omens, the halos and their openings can point ‘west’, ‘to the rear wind’, and ‘to the cold wind’. Clearly, this does not refer to any cold wind like the ^{IM}ŠU-RU-UP-PU-U in Gilgameš, but to a cardinal point. The first omen describes a triple halo: the first halo has an opening toward the ‘cold wind’, the middle halo (likely) has no opening, and the third halo opens toward the west. The apodosis predicts a declaration of war by the king of Šubartu (associated with the ‘cold wind’) against the king of Amurru (west), while the kings of Ḫatti and Elam remain unaffected. The second and third describe the first halo as pointing ‘to the rear wind’ or ‘to the cold wind’, the second as having no opening, and the third halo as pointing again ‘to the rear wind’ or ‘to the cold wind’.¹⁰⁷ The directions in which the halo remains intact—i.e. in which it either ‘leans’ (*neyan*, §3–4) or in which it is not ‘open’ (*hešan*, §2)—is neutral or positive. Conversely, lands associated with the other directions suffer warfare, with the outcome influenced by whether the first or last halo aligns with a particular direction.¹⁰⁸ Now, which directions correspond to which lands here? Parallels to this omen are found in Enūma Anu Enlil X, as already seen by Fincke.¹⁰⁹

ACh SS 15 (K 2887) obv., 10–17¹¹⁰

obv. 10 DIŠ-ma¹¹¹ ⟨1⟩ KÁ-šú ana ^{IM}1 BAD 2-ú KÁ NU TUKU 3-šú KÁ ana ^{IM}2 BAD KUR URI^{KI} ana KUR SU.BIR^{KI}

obv. 11 ZI-ma BAD₅.BAD₅ SU.BIR^{KI} GAR-an ana KUR ELAM.MA^{KI} u KUR MAR.TU^{KI} NU TE-ḫi GIS-TUKUL^{MEŠ}

obv. 12 KUR URI^{KI} UGU GIS-TUKUL^{ME} SU.BIR^{KI} KALA^{MEŠ}

obv. 13 [DIŠ-m]a 1 KÁ-šú ana ^{IM}2 BAD 2-ú KÁ NU TUKU 3-šú KÁ-šú ana ^{IM}1 BAD KUR SU.BIR^{KI}

obv. 14 [ana^{KU} RURI^{KI} ZI-ma BAD₅.BAD₅ KUR URI^{KI} GAR-an ana KUR ELAM.MA^{KI} u KUR MAR.TU NU TE-ḫi

obv. 15 [GIS-TUK]UL^{IME KUR SU¹.BIR^{KI}} UGU GIS-TUKUL^{MEŠ} KUR URI^{KI} KALA^{MEŠ}

obv. 16 [DIŠ-ma 1 KÁ-šú ana ^{IM}3] BAD¹ 2-ú KÁ NU TUKU 3-šú KÁ-šú ana ^{IM}4 BAD GIS-TUKUL^{ME} ELAM.MA^{KI} UGU GIS-TUKUL^{MEŠ} KUR MAR KALA^{MEŠ}

obv. 17 [DIŠ-ma 1 KÁ-šú ana ^{IM}4 BAD 2]-^rú KÁ¹ NU TUKU 3-šú KÁ-šú ana ^{IM}3 BAD GIS-TUKUL^{ME} MAR.TU^{KI} UGU GIS-TUKUL^{IMEŠ} ELAM.MA^{KI} KALA^{MEŠ}112

[elam-ma], as the mistake would be difficult to explain otherwise. This raises the possibility that the writing in KUB 8.35 is not a phonetic complement but rather a logographic alternative ELAM.MI. I cannot produce a Mesopotamian example for either option.

¹⁰⁷ Although the protases in §3'' and §4'' are damaged, the universal principle in Mesopotamian omen texts—that opposite omens of the same type yield opposite results—makes it clear that their protases must have been identical except for the switched wind names. In §4'', I believe the relevant sign traces can still be identified, albeit faintly.

¹⁰⁸ Cf. also Fincke 2004, 236. It is possible that, despite the difference in formulation, the protases convey the same meaning—i. e., a halo leaning west could be equivalent to one open in the east. Hittite scribes are not always consistent in their translations of Akkadian protases, as seen in lunar omen texts such as KUB 29.11+ and KUB 8.30.

¹⁰⁹ Fincke 2004, 235.

¹¹⁰ Edition: eBL, <https://www.ebl.lmu.de/fragmentarium/K.2887> (accessed 11 December 2024).

¹¹¹ Abbreviated for DIŠ 30 3 TÜR NIGIN-ma found in obv. 1.

¹¹² ELAM.MA^{KI} KALA^{MEŠ} moved to the end of the next line.

obv. 10-12 ‘If (the moon has three halos) and its (first) gate is open towards the south, the second has no gate, and the third’s gate is open towards the north: The land of Akkad will rise against the land of Šubartu, and it will result in the defeat of Šubartu. It will not affect the lands of Elam and Amurru. The weapons of Akkad will be stronger than the weapons of Šubartu.

obv. 13-15 [If (the moon has three halos) and the first’s gate is open towards the north, the second has no gate, and the third’s gate is open towards the south: The land of Šubartu will rise against the land of Akkad, and it will result in the defeat of Akkad. It will not affect the lands of Elam and Amurru. The weapons of Šubartu will be stronger than the weapons of Akkad.

obv. 16 [If (the moon has three halos) and the first’s gate is open towards the east, the second has no gate, and the third’s gate is open towards the west: The weapons of Elam will be stronger than the weapons of Amurru.

obv. 17 [If (the moon has three halos) and the first’s gate is open towards the west, the second has no gate, and the third’s gate is open towards the east: The weapons of Amurru will be stronger than the weapons of Elam.]

Strictly speaking, only the first omen of KUB 8.35 is parallel to K 2887 because it deals with the halo’s openings, whereas §§3”–4” are about the direction in which a halo ‘leans’. Nevertheless, the principle in K 2887 is evidently the same as in KUB 8.35: Conflict happens where the halo is not, and the sequence of halos determines the victor. K 2887 associates Amurru with the west, Elam with the east, Akkad with the south, and Šubartu with the north. KUB 8.35 links Amurru with the ‘west’ (^{IM}MAR.TU) and Šubartu with the ‘cold wind’ (*ekunaš* ^{IM}). In the second and third omens, the ‘cold wind’ and the ‘rear wind’ (^{EGIR} ^{IM}) incite a war between Ḫatti (= Akkad) and Elam. There are two possible solutions for the conundrum of directions.

Suppose we follow the system of K 2887 concerning south, north, east, and west. In that case, ^{IM}*e-ku-ni* would mean ‘to the north’.¹¹³ KUB 29.11+, KBo 2.19+, and KUB 8.28, as well as the Hittite Gilgameš epic, all strongly suggest ‘south’ is ^{IM}GAL/šalliš *ḫuwanz*, which leaves ‘east’ and ‘west’ as potential meanings for ^{EGIR} ^{IM}. In this system, Elam is associated with the East. It remains unaffected by open halos to the ‘west’ and ‘north’ in the first omen. However, it is drawn into conflict with Ḫatti (= Akkad) due to a halo leaning ‘north’ in the second omen and to the ‘rear wind’ in the third. This means that ^{IM}MAR.TU and ^{EGIR} ^{IM} lie in the same direction, namely ‘west’: Unless the absence of an intact halo means something different in omens two and three, a halo leaning west should affect the east, that is, Elam. By elimination, *tar(a)šmeni* in KUB 29.11+ must mean ‘to the east’ or be an alternative term for one of the other cardinal directions.

This system, corresponding to Fig. 4-3 in Rochberg-Halton’s *Aspects of Babylonian Celestial Divination*,¹¹⁴ can explain the cardinal directions in Text 5, but as should be clear from the preceding analysis, we run into problems when comparing this text with Texts 1 and 3. If these identifications of cardinal directions are correct, the order of directions in Text 1 is south-east-north-west, because unless there is another unknown term, *ḫ-ni* in KUB 29.11+ obv. II, 18 must stand for *e-k[u-ni]*, meaning ‘north’ in this scenario. This reconstruction raises three issues. First, as argued above, it is unlikely that the protases of this text should have a different order than their parallels while maintaining the same apodoses. Second, the sequence of cardinal directions in Mesopotamian omen texts is not entirely arbitrary. The most common orders are S-N-E-W and S-W-N-E. Variant orders are N-W-E-S, W-N-E-S, N-S-E-W, and W-E-N-S.¹¹⁵ The order S-E-N-W would be unusual for a Mesopotamian omen text. Third, Text 3, §6’ showed that the ‘great wind’ is

¹¹³ Suggested by Fincke 2004, 235–236; Riemschneider 2004, 199; and Tischler 2008, 64.

¹¹⁴ Rochberg-Halton 1988, 53.

¹¹⁵ Rochberg-Halton 1988, 53–54.

associated with Elam. This can be east or south, but since the ‘great wind’ in KUB 29.11+ obv., 14 predicts the destruction of Akkad and Elam, and Akkad can be south, north, and even west, but never east,¹¹⁶ everything speaks for the ‘great wind’ meaning ‘south’ and Elam representing said south, not the east as in the system above.

The solution lies in abandoning the system found in K 2887 and adopting the system outlined in Rochberg-Halton’s Fig. 4-4 and Fig 4-6 instead. In Old Babylonian eclipse tablets, Šubartu is associated with the east, Amurru with the west, Akkad with the north, and Elam with the south. This arrangement aligns neatly with the context here and continues to appear in first-millennium Mesopotamian sources (EAE 16–17; 20).¹¹⁷ *im-e-ku-ni* cannot be ‘west’, as *im^{MAR.TU}* is used in the same omen for a different direction. If *im GAL* is ‘south’ and *tar(a)šmenaš* ‘north’, then by elimination, it should be ‘east’. This interpretation fits the context: in the first omen of KUB 8.35, the halos open to the east (*im-e-ku-ni*) and west (*im^{MAR.TU}*), leading to war between Amurru and Šubartu, leaving Ḫatti and Elam unaffected. The last two omens are damaged, but here, the halos do not open but rather lean or turn in specific directions. The areas not covered by the halos are the ones affected by war,¹¹⁸ and the first halo leaning east (*im-e-ku-ni*) gives victory to Elam (south), whereas the first halo leaning to ‘the rear wind’ (*EGIR IM*) gives victory to Ḫatti (north). Again, by elimination, *EGIR IM* should be ‘west’, making it the Hittite logogram for *im^{MAR.TU}*.

These identifications line up perfectly with the order of entries and sign traces in KUB 29.11+: *im GAL* corresponds to *im^{U₁₉.LU}*, *im tar-aš-me-ni* to *im^{SI.SÁ}*, *im e-k]u-ni*, to *im^{KUR.RA}*, and while the fourth entry is lost, Text 5 above and §7’ of Text 3 show how the ‘rear wind’ is identified with the west and associated with Amurru:

Text 3.2

§7’	(If) The moon’s [horn] becomes grown (B: If the moon shi[nes ...]) and the rear wind rises, and it (the moon) becomes bright: The land of Amurru will perish [SI ^d 30-a]š miyantešši nu appezziyaš <i>im-anz(a)</i> [ara]i n=aš parkuezzi <i>KUR^{URU}MAR.TU</i> ḫarkzi
A	Frg.1+3 rev. IV 7/rev. IV 9’ [SI ^d 30-a]š mi-an-te-eš-<ši> nu ap-pé-éz-zi-ia-aš <i>im-an-za</i> Frg.1+3 rev. IV 8/rev. IV 10’ [a-ra]-i na-aš pá-r-ku-*ez*-zi <i>KUR^{URU}MAR.TU</i> ḫar-ak-zi
B	Frg.1+2 obv. 14/1’ ták-ku ITU-aš mi-iš-[ri-u-e-eš-zi(?)] Frg.1+2 obv. 15/2’ ṛa ¹ -ra-a-i na-aš [

Note also that in KUB 57.73 rev. IV, 1, the *appezziš ḫūwanz*, ‘rear wind’, appears in an apodosis shortly before a paragraph divider and a shift in text genre, thereby appearing as the last of the four winds, consistent with what to expect from a Mesopotamian model text.

All this evidence supports the interpretation that *ekunaš ḫūwanz*, ‘the cold wind’, means ‘east’, and *appezzi(ya)š ḫūwanz*, the ‘rear wind/wind of the rear’, means ‘west’. The translation ‘rear wind’ rather than ‘last wind’ is probably still to be preferred, despite the well-known Mesopotamian system of numbering the four winds one (south), two (north), three (east), and four (west), because in KBo 2.19+ we find *appezziyaš ḫūwanz(a)* ‘wind of the rear’ rather than *appezziš ḫūwanz(a)*. Also, I know of no attestation of **ḫantezziš ḫūwanz(a)* or the like in Ḫattuša to complement a supposed ‘last wind’.

¹¹⁶ Rochberg-Halton 1988, 53–54.

¹¹⁷ Rochberg-Halton 1988, 53–56, 59.

¹¹⁸ Fincke 2004, 236.

If the west is the ‘rear wind’, the ‘front wind’ would be the ‘cold wind’, i.e., east. This resolves de Roos’s question about the default orientation in Anatolia.¹¹⁹ At least according to the Hittite wind names, it was east, which is different from the ‘wind rose tablet’ discussed in the introduction and the northern perspective that is implied if the base meaning of Luwian *ipparwašši-* ‘western’ is ‘left’. It does, however, align with the observations made by D. J. Wiseman and other scholars about Mesopotamia and the Levant quoted above.

Concluding remarks

Most other passages containing wind adjectives can now be safely excluded from discussions about wind and cardinal directions: The supposed wind name *šA-A-RU ú-du-me-ni*¹²⁰ is, in fact, a sentence meaning ‘we will carry away plunder’ (*šāru udumeni*).¹²¹ The Akkadographic wind names in Gilgameš and IM.KUN in KUB 8.35 describe meteorological phenomena.¹²² Attributes qualifying the wind such as *aššu-* ‘good’ (KUB 33.9 rev. III, 10’), *lilwant-* ‘fast’ (KUB 33.96+ obv. I, 14), or *šešduwaš* ‘of prospering’ (KUB 24.3+, rev. III, 39”-40”) are either clear through the context and the genre of the text (KUB 33.9; 33.96+) or belong to the Mesopotamian tradition of rituals and prayers in which the winds can transport plagues and remedies or summon and repel demons (KUB 24.3+; see also the literature in n. 13–15 above).

The only two possible exceptions are the fragmentary votive text of Tudḫaliya IV, KBo 33.216, and a broken line in the lunar omen tablet KUB 8.30. KBo 33.216 includes the phrase *ū A-NA IM UGU ku-ī-[-]* (rev. 3), ‘and to the upper wind ...’, which de Roos interprets as ‘east’, drawing on the use of UGU for ‘east’ in Nuzi.¹²³ While this is plausible—since the Hittite ‘upper land’ lies predominantly east of Ḫattuša—it is also possible that ‘upper land’ refers to its higher elevation compared to the ‘lower land’.¹²⁴ The fragmentary state of the passage and the lack of additional attestations prevent any definitive conclusions.

In KUB 8.30 rev. 22’, the apodosis] *uTU-aš IM-an-za a-r[a-a-i]* appears. This could be ‘the sun’s wind’, but also ‘the wind of sun[rise]’ or ‘the wind of sun[set]’, depending on the word missing before it. The latter two interpretations would combine the sun and wind as directional markers, providing another way to indicate east or west. However, the fragmentary state of the text makes it impossible to determine the intended meaning.

The meaning and etymology of the north wind, *tar(a)šmena-*, is unclear, whereas the names of the remaining three are semantically transparent. Why they are called that way is difficult to say, though. The west wind being called the ‘wind of the rear’ likely reflects an eastward orientation as the default in Hittite thought. This could also explain why the east wind is referred to as the ‘cold wind’, as it would have been seen as blowing directly toward one’s face. Central Anatolia receives warm air masses from the Sahara to the southwest, while cold air masses from Siberia and central Asia reach the region via the Black Sea and the Caucasus.¹²⁵ Around Boğazkale, southern and eastern winds dominate in winter, while northeastern winds prevail in summer.¹²⁶ According to the Global Wind Atlas, Boğazkale receives the most wind and the highest wind speeds from the south.¹²⁷ Hence, modern wind data does at least not draw a completely

¹¹⁹ De Roos 1990, 95–96.

¹²⁰ De Roos 1990, 94; Riemschneider 2004, 100, 102.

¹²¹ Cf. also HW² Ḫ, 812 and CHD Š, 296.

¹²² For IM.KUN cf. Fincke 2004, 227–228.

¹²³ De Roos 1989, 47–48; 1990, 94 n. 24.

¹²⁴ Gurney 2003, 120.

¹²⁵ Akçar et al. 2007, 171–172.

¹²⁶ Şahin – Türkeş 2020, fig. 2; Erol 1983, fig. 1.

¹²⁷ <https://globalwindatlas.info/en/> (accessed 22 August 2024). Note that the wind data for Türkiye has not yet been validated.

different picture than the ancient Hittite wind names for east and south.¹²⁸ That said, Anatolia's rugged terrain makes its climate—and wind patterns—much more complex than the relatively flat plains of southern Mesopotamia. With just the Hittite wind names to work with and no ancient description of the climate, modern and ancient meteorological phenomena correlations are tentative at best. It must suffice that the Hittite names for the four winds and cardinal directions are now reasonably clear:

Table 7. The Hittite words for the cardinal directions.

Direction	Sumerogram/ Akkadogram	Hittite logogram	Hittite
South	^{IM} U ₁₉ .LU	^{IM} GAL/ ^{IM} GAL/ ^{GAL} IM	<i>šalliš huwanz</i>
North	^{IM} SI.(SÁ)/ ^{IM} EL-TA-NU	?	<i>tar(a)šmenaš huwanz</i>
East	^{IM} KUR.RA	?	<i>ekunaš huwanz</i>
West	^{IM} MAR.TU	EGIR IM	<i>appezziš huwanz</i> <i>appezziyaš huwanz</i>
?	?	IM UGU	?
?	?] ^d UTU-aš IM-an-za	?

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¹²⁸ Murray 1987 demonstrates that modern wind data of Greece aligns quite well with ancient Greek accounts, showing no general reason to avoid comparing modern and ancient wind data. However, in case of Hittite, where only the wind names are preserved, there is little ancient data available for comparison.

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