The etymology of 'Sun' in Khitan small script used in Liao dynasty considered as the source on early stages of cultural astronomy

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Abstract

This etymology contributes to clarifying the astronomic (astrological) ideas of the Early and High Middle Ages as they were reflected in languages of the key kingdoms of Eastern and Central Asia. We attest Japanese *ni* 日 'Sun' with a low accent as the part of Japanese *nihon* 日本 'Japan' and Old Korean **ni* 日 'Sun' as the part of a place-name re-naming in 757 CE written in the Korean ancient literature of *Samguk sagi* 'History of the Three Kingdoms', which were borrowed from Chinese characteristics of 日 'Sun'. We attest **ni* 'Sun' > **ń* with *ńä:r* 'day' and *suń* 'night' in the literature of Khitan small script in 1101 CE, where *a:r* 'to exist' with a long vowel *a:* in Khitan small script shows *ńä:r* 'day' < **ni-a:r* 'Sun exists' and *suń* 'night' < **su-*ni* 'to extinguish the Sun' is shown with **su* 消 'to extinguish' in Chinese characteristics concerning which we attest that the direction 'west' corresponds to one where the Sun sets and might have another denotation of **su* 消 'to extinguish' as a loanword in Koguryeo language. We know Korean *so* 消 'to extinguish' as a loanword in Chinese characteristics.

Keywords: astrological wisdom in Khitan literature, cultural and historical astronomy of Khitan small script.

Introduction

Kara Khitans were the forest nomads of Manchuria whose appearance in the 5th century and their spread afterwards eventually led to the establishment of Liao kingdom in Chinese-like style. The Khitan empire though was established in the early 10th century by lord Abaoji who started to rule in the manner of Chinese emperors, established the system of primogeniture (nomadic Khitans, on the other hand, before that practiced lateral succession), whose descendants converted a loose confederation of several tribes into a Chinese-like bureaucratic state[1].

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[1] Alternative superpower and their rivals – the Song emperors - became apprehensive of the might of Kara Khitans, who by the time of 1005 CE took half of Song dynasty northern possessions (amongst others 16 prefectures of strategic importance to the north) and ruled as Chinese-style emperors (their leader took the name of Emperor Shengzong) but also retained close connection with people of the steppes. There always was contradiction whether Liao or Song is a true heir of Tang empire. Khitan small script and Khitan large

Pelliot concludes partially relying on the account Persian scholar Rashid al-Din (also Rashid ad-Din) who was born in 1247 CE and died in 1318 CE:

Les K'i-tan parlaient une langue étroitement apparentée au mongol encore que fortement palatalisée. (Pelliot, 1920, pp. 146-147).

[The Khitan were speaking a language closely related to Mongolian although strongly palatalized].

Khitan small script consists of partially unknown (not yet completely deciphered) inscriptions on monuments (also bronze objects and coinage) from the Far East. In this type of literacy there are words for 'Sun', 'night', 'day', but what is most curious, is to trace the connection with other related (culturally or genetically) languages, what is interplay of meanings (and possible functions of semantics in discourse) in comparative perspective[2]. Different algorithms and methods of analysis were created and offered and it was proposed, in particular, to compare scripts with living natural languages, having had long literary tradition, such as classical Chinese, also Japanese, Korean, and Vietnamese.

The 1st emperor in Liao dynasty had the idea of creating Khitan large script ideographically on the basis of Chinese characteristics. Then a younger brother of the 1st emperor in Liao dynasty created Khitan small script which was phonemic alphabets such as Uygur script, by use of graphemes like Chinese characteristics, that is to say, Yelü Diela, younger brother of Khitan emperor Yelü Abaoji, invented the 'Khitan small script'. At the time of its flourishing this government (in Eastern scholarship called Liao kingdom) nurtured Khitan small script, until Liao state was collapsed by the alliance of Jurchens[3] (other people from Manchuria) with Song civilization of imperial China, which, as well as Khitans / Liao had seen themselves as the rightful heirs of Tang). The use of Khitan small script was prohibited in 1191[4] CE by Emperor

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script had been in use, forms of literacy and writing partially based on classical Chinese, partially not yet explained by scholars. Religion of Khara Khitans, the Buddhism in Liao belongs to Mahayana Buddhism.

[2] As practice of comparative, and in particular, macro comparative studies seemingly impossible reconstruction, clarification of meaning, or even decipherment of 'dead' or partially understood or known languages with natural ones, especially outside of the scope supposed linguistic family (see case for clarification and reconstructions of some Proto-Uralic and Proto-Indo-European words in comparison, for example, Starostin, 2003, pp. 464-484) might full well produce fruit for the decipherment process itself. Various scholars provide in case of Kara Khitan script different phonetic interpretation for graphemes, as for phonetics it can be only and only reconstructed as it often happens in the case of languages distant from us in time (even with highly-developed literary traditions, for the analogies, see Ancient Greek, partially also Latin and Sumerian).

[3] Jurchen warlords, called in as the Song allies, assembled around general Aguda, who accomplished a major invasion well into the Khitan territories and drove the Khitan emperor farther south, right into the hands of the Song armies. However, Yelü Dashi, Khitan emperor refused to acknowledge the downfall of Khitan polity. He took 10,000 warriors («several thousand wagons» in chronicles) and went west. Now comprised only of the relocated troops of former Liao, Kara Khitans in the 12th century unexpectedly for the whole Muslim world and Byzantine, attacked and subdued the 1st Kara-Khanid khanate, and secondly, Seljuk Turks state - centers of the Muslim influence in the Central Asia and Asia Minor respectively, hence re-installing themselves as new khanate. The 2nd Kara Khitan state was only subjugated in time of Mongol invasions. Those kingdoms should be differentiated from the independent state Western Xia, who spoke Tangut - Sino-Tibetian language and embraced Buddhism.

[4] Soon after that Jurchen writing system (of Manchu language, was much better studied) replaced Kara Khitan script as the dominant literacy of Mongolia and Manchuria regions, where Jurchens/Jin became key political force after banning Khitans and coming to terms with Song. During the regime of the Qara Khitai khanate in Central Asia, script was also no longer in use.

Zhangzong of Jin (who became the leader of Jurchens former tribes after they formed state and established government).

During Liao dynasty, Yelü Abaoji invented Khitan large script in 920 CE. Khitan small script was invented later in about 924 or 925 CE and used together, where 'large' and 'small' stands for 'in chronological order of inventions', i.e. firstly and secondly. The grapheme 大 'large' in Chinese characteristics means 'east' in Khitan small script, while the grapheme 小 'small', 'south'. It can be suggested that the Sun rises in the east firstly and goes to the south at noon secondly. We also know, that the Sun casts a large shadow in the morning firstly and a small one, at noon secondly. We believe, this observation also contributes to the topic chosen. For those interested, Khitan small script denotes 大 'east', 小 'south', 十 'west', 一 'north', which a Japanese scholar Toyoda deciphered in 1990 (Toyoda, 1990, p. 5).

Brief summary of the tradition of Khitan small script study would include Louis Kervyn, the first European linguist who studied it, see his articles about the discovery of Khitan language inscriptions (Kervyn, 1923a, pp.237-243; Kervyn, 1923b, pp.292-301). See about Kervyn foundings and modern assessment of Kervyn's role (Kane, 2009, pp.1, 3, 83-85). The most comprehensive account of Khitan language is a treatise *Qidan xiaozi zai yanjiu* 'Further research on Khitan small script' of Chinese scholar Chinggeltei et al. (Chinggeltei, Wu, Jiruhe, 2017), which consists of 2,336+xx pages and 27cm in height and includes all known Khitan texts up to date. The work is a revised and enlarged edition of *Qidan xiaozi yanjiu* 'Research on Khitan small script' (Chinggeltei, Liu, Yu, Xing, 1985). The latter was translated into Korean in 2016 (Kim, 2016). Also, two attempts on reconstruction of vocabulary have been made by Soviet scholars; see V. S. Starikov and M. V. Arapov (Starikov, 1982; Arapov, 1982). Classical historical and typological description was accomplished by an Australian scholar Kane of the southern hemisphere (Kane, 2009). Such western prominent figures in the field of historical comparative research as András Róna-Tas and Alexander Vovin devoted a contributory amount of research to the problem[5]. To decipher Khitan small script might be considered one of the intellectually challenging projects inside the community of scholars studying culture, literacy and history of Middle and Far East.

Last inscription written in 1176 CE in Khitan large script was discovered, so, this is terminus a quo for Khitan large script[6] and it was used at least till 1176 CE.

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[5] There are also national specifics of approaches today: Chinese scholars have strong points to reveal loanwords from Chinese characteristics in Khitan small script. Japanese scholars majoring in Old Mongol or Dagurian have merits to study Khitan phrases. Korean scholarly tradition discerns footsteps of Khitan small script which it was established has proximity to Koguryeo language, one of the data that supports it is Koguryeo's place-names on Korean peninsula. Regarding Khitan, some scholars might have thought lately that it seems *not* to belong to the Mongolic languages*, but* to have rather a broader Altaic-affiliation. On the basis of this, Khitan is "classified as a Para-Mongolic language" by modern Altaicists and Turkologists (Jahunen, 2006, p. 393). Notwithstanding, yet a lot to be understood, as a Russian scholar D. Kara once formulated it: "Imagine following task – we have to decipher Japanese script, imagine that we do not know Japanese language and Chinese hieroglyphics, literary sources per se are few, and about their content, only loose translations that we have in typologically different language tell us, above all, we have only knowledge about relatively well enough studied but distant in time genetically affiliated language." (Kuzmenkov, 1997, p. 80).

[6] For more information on the discovery of this inscription in Khitan large script (written in 1176 CE), see Yoshimoto's work (Yoshimoto, 2013). A Japanese scholar Yoshimoto, Chieko is also called Aisingioro, Ulhichun.

Literary tradition of Khitan small script used in Liao dynasty has been never studied as the astronomical (astrological) source before. Each word had been studied with difficulty.

Here is a rubbing of stone inscription of eulogy for Empress *Xuanyi* written in Khitan small script in 1101 CE. See in database «Ancient Writing Library» the nexus of the Kodaimojikan, *Kittan bunji* 'Khitan script' (Kodaimojikan, 2004, p. 6). Let's read a few words and a phrase in Khitan small script: *ńä:r* 'day'(Fig. 1): 4-16, 5-26, 10-7, 10-28; *ńä:rend* 'on the day' (Fig. 2): 25-15; *a:r* 'to exist' (Fig. 3): 11-28, beginning at the right of p. 6.

Figure 1. Khitan small script (Kodaimojikan, 2004, p. 6).

Figure 2. Khitan small script (Kodaimojikan, 2004, p. 6).
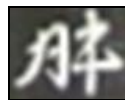

Figure 3. Khitan small script (Kodaimojikan, 2004, p. 6).

There is a table[7] with phonetic alphabets of Khitan small script by modern Japanese scholar Ōtake, which reminds us of Mendeleev's 1871 periodic table (Ōtake, 2015, p. 100). See in the work appendix with a table (Ōtake, 2015, p. 100). Here is the table (see Tables 1, 2, 3 divided for convenience, but in original, one table.), which is his invention devoted to ease our task of elucidating meanings and phonemic images of graphemes arranged and numbered by Starikov V. S. in 1966 (Zaytsev, 2010, pp. 3-52).

Figure 4. Nos. 45, 46, 47 by Starikov in 1966 (Zaytsev, 2010, p. 5).

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[7] In spite of Ōtake's table partial success, such as Nos. 112, 290, 292 among graphemes arranged and numbered by V. S. Starikov in 1966 (Zaytsev, 2010, pp. 10, 22) were never deciphered; some have multiple interpretations by different scholars, in the decipherment of 'riddles' of antiquity Khitan small script stands in the middle between completely deciphered Linear B and completely unknown the Arkalochori Axe, Harappa script and Linear A. It can be compared on this stage of study with multiple schools of interpretation of Maya glyphs, before complete reading of it by Yuri Knorozov was accomplished. All efforts of doing this study yet proved assiduously difficult.

A Soviet scholar V. S. Starikov arranged Khitan small script in 1966. Each grapheme is numbered. Hommage à Starikov, we remember his numbers here. For example, No. 45 (also Nos. 46, 47) (Fig. 4) was arranged and numbered by Starikov in 1966 (Zaytsev, 2010, p. 5). It reads *qā* 'emperor' with a long vowel *ā* in Khitan small script (Ōtake, 2015, p. 91).

Khitan *ni 'Sun'

No. 157 (Fig. 5) reads *es* in Khitan small script, and No. 87, *uń* (Fig. 6), where *es* and *uń* make *suń* 'night' in Khitan small script. See Toyoda, 1990, p. 14; Ōtake, 2016, p. 83.

Figure 5. No. 157 by Starikov in 1966 (Zaytsev, 2010, p. 13).

Figure 6. No. 87 by Starikov in 1966 (Zaytsev, 2010, p. 8).

We attest *suń* 'night' in Khitan small script .
A kind of text written in Khitan small script in 1041 CE was discovered in 1975.
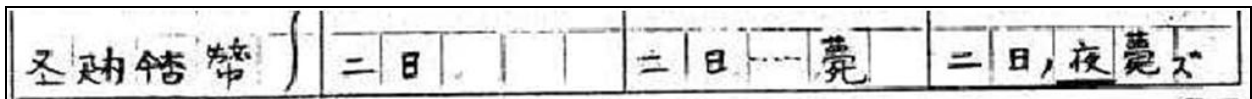Here is a history of deciphering *suń* 'night'.

Figure 7. A history of the decipherment on a part of the text (Toyoda, 1990, p. 14).

At first, a Chinese scholar Liu Fengzhu (劉鳳翥) decyphered 'on the 2ⁿᵈ day (二日)' in 1984 and then, an another scholar Wang Hongli (王弘力) did 'died on the 2ⁿᵈ day (二日 […] 薨)' in 1986, and at last, a Japanese scholar Toyoda Gorō (豊田五郎) succeeded in deciphering 'night'(夜) in Khitan small script in 1990 (Toyoda, 1990, p. 14). It is read *suń* 'night' in Khitan small script nowadays (Ōtake, 2016, p. 83). A well-known expression "he died during the night of the second [next] day" was put into English by an Australian scholar Daniel Kane (Kane, 2009, p. 109).

No. 463 (Fig. 8) reads *ńä:r* with a long vowel *ä* in Khitan small script, where it means 'day', 'Sun', 'daytime' in Khitan small script, but Ōtake reads *ńär* with a short vowel *ä* (Ōtake, 2016, p. 83).

Figure 8. No. 463 by Starikov in 1966 (Zaytsev, 2010, p. 66).

Khitan *ńä:r* 'day' and *suń* 'night' are well attested in the literature of Khitan small script in 1101 CE. We might discern *ńä:r* 'day' < **ni-a:r*, where **ni* 'Sun' exists, namely with *a:r* 'to exist' in Khitan small script, whereas we might encounter *suń* 'night' < **su-*ni*, where the loanword

might mean 'to extinguish the Sun', namely Khitan **su* 'to extinguish' and Khitan **ni* 'Sun', which were borrowed from Chinese characteristics.

Previous studies on Khitan *ńä:r* 'day' explicated these connections :

Shimunek in 2011 established Khitan **ńair* 'Sun, day' < **ńara*, Ōtake in 2016 partially supports it : Khitan *ńär* 'day' but proposes different phoneme (Shimunek, 2011, p. 103; Ōtake, 2016, p. 83).

Róna-Tas finds his newest explanation for Khitan *när* 'day', it is derived from *näyir* 'day' (Róna-Tas, 2017, p. 176).

Takeuchi attests Khitan **när* 'day' (Takeuchi, 2016, p. 10), while Bertalan Apatóczky and Róna-Tas in 2019 discern Khitan *närä* 'day' (Apatóczky, Róna-Tas, 2019, p. 261).

Our conclusion does not support this version; see the work (Roh, 2018, pp. 1-2), Khitan *ńä:r* 'day', where Khitan *a:r* 'to exist' with a long vowel *a:* might corresponds to Japanese *ari* 'to exist, being' with a high accent *a*.

See Modern Korean *nar* 'day'(also 'Sun', 'daytime') with a high tone reflected.

A previous study on Khitan *suń* 'night' shows Khitan *suni* 'night'(Kane, 2009, p. 108).

Mostly Ōtake establishes its meaning and phonetics as Khitan *suń* 'night'(Ōtake, 2016, p. 83). See Modern Korean *so* 消 'to extinguish' borrowed from Chinese characteristics.

We attest that 'west' in Koguryeo language is also called **su* 消 in Chinese characteristics as a loanword which is seen in the literature of *Tongdian* lit. 'Comprehensive Institutions', a Chinese institutional history and encyclopedia text written in 801 CE.

See 'west', namely **su* 消 in the black-into-red right letter by searching in the website «Chinese text project» - philological corpora of Chinese texts and poetry[8] or in the edition (Du-801, vol. 8, p.186).

We consider that the direction 'west' corresponds to one where the Sun sets and might have another denotation of **su* 消 'to extinguish' namely 'the west where the Sun sets'. As an etymology on *su*ń 'night' in Khitan small script might be a compound word of **su* 消 'to extinguish' and **ni* 日 'Sun' as loanwords, the part of **su* 消 is compared to **su* 消 in Koguryeo language as a loanword.

Japanese *ni* 日 'Sun'

In Modern Japanese, *nihonjin* 日本人 'Japanese people' and *nihongo* 日本語 'Japanese language' are frequently used words, where we might discern Japanese *ni* 日 'Sun' as the part of Japanese *nihon* 日本 'Japan' which was borrowed from Chinese characteristics.

Korean **ni* 日 'Sun'

We might discern **ni* 日 'Sun' with a low tone with a place-name re-naming in 757 CE, written in the Korean ancient literature of *Samguk sagi* 'History of the Three Kingdoms'[9].

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[8] https://ctext.org/tongdian/186?searchu=%E5%8D%B3%E6%B6%88 (accessed on 19 June 2020)

[9] The *Samguk sagi* ('History of the Three Kingdoms' or 'Historical Records of the Three States') is a 12th century CE text written by Kim, Busik which is considered the first history of Korea. The text covers the history of Silla, Baekje (also Paekche), and Goguryeo (also Koguryeo, Koguryo), the three kingdoms which dominated the Korean peninsula between the 1st century BCE and 7th century CE. It contains multiple references to the multitude of historical accounts, which were never discovered themselves. It is

See the edition (Kim, 1145, vol. 34, p. 6) or the ebook at «Korean history database» website[10], where the Korean ancient literature of *Samguk sagi* 'History of the Three Kingdoms' shows:, *ni*日 (meaning) 'Sun' in Chinese characteristics at the 18th letter of the 7th line beginning at the right on the page corresponds to *ni* 泥 (sound) 'Sun' in Chinese characteristics at the 7th left letter of the 8th line beginning at the right. For those interested, detailed guide to the book was provided by the web of Korea Cultural Heritage Administration[11].

Conclusions

We might now decisively discern an accord among the common loanword **ni* 'Sun' with a short vowel **ni > *ń* such as *ńä:r* 'day' and *suń* 'night' in the literature of Khitan small script in 1101 CE, Modern Japanese *ni* 日 'Sun' as the part of Japanese *nihon* 日本 'Japan', Old Korean **ni* 泥(sound) 日(meaning) 'Sun' as the part of a place-name re-naming in 757 CE, which were borrowed from Chinese characteristics of 日 'Sun'.

Etymological analysis of the common heritage of the Khitan small script suggests loanword structure as follows:

	'Sun'	Khitan etymology	Khitan and Chinese loanwords(S1)	Modern Japanese and Chinese loanwords(S2)	Modern Korean and Chinese loanwords(S3)
'Sun'		**ń < *ni* 'Sun'	**ń < *ni*(S1) 日 'Sun' with a short vowel	*ni* (S2) 日 'Sun' with a vowel with a low accent	**ni* (S3) 日 'Sun' with a low tone
'Day'	The Sun exists in the daytime.	*ńä:r* 'day' *< *ni-a:r* 'the Sun exists'	*a:r* 'to exist' with a long vowel *a:*	*ari* 'to exist, being' with a vowel *a* with a high accent	*nar* 日 'day', 'Sun', 'daytime' with a high tone
'Night'	The Sun is extinguished at night.	*suń* 'night' *< *su-*ni* 'to extinguish the Sun'	**su* 消 (S1) 'to extinguish'		*so* 消(S3) 'to extinguish'

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also piece of literature in the same time not unlike European "Annales" by Tacitus. *"Samguk sagi"* concerns amongst other things mythologies of the Sun and the moon, as well as the biographies of ancient kings.

[10] http://db.history.go.kr/item/imageViewer.do?levelId=sg_034r_0020_0250&begin=sg_c_034_000 (accessed on 19 June 2020)

[11] http://english.cha.go.kr/chaen/search/selectGeneralSearchDetail.do?mn=EN_02_02&sCcebKdcd=12&ccebAsno=07220000&sCcebCtcd=11&pageIndex=1&region=&canAsset=&ccebPcd1=&searchWrd=SAMGUK+SAGI&startNum=&endNum=&stCcebAsdt=&enCcebAsdt=&canceled=&ccebKdcd=&ccebCtcd= (accessed on 19 June 2020).

Table 1. Ōtake's table in 2015 (Ōtake, 2015, p. 100). Not yet completely deciphered.

	a-	*ā-*	*ē-*	*o-*	*ŭ-*	*u-*	*ü-*	*i-*	*e-*	*ẽ-*	その他
-[:]	为	屮	攵	及	令	叐	火	关	岔		夾 *ō̤*, 谷 *ī̤*
-i̯	丰	朿		朩	火				币		
-u̯	夬	号	丙						土		歬 *eu*
-p									业		
-t									令		
-č									朿		
-k									八		
-b	生			灯	刈			癸	丹	业	
-d	方		丙	币	化			先	公	令	
-ĵ	艾		孚	州	羽				支		
-g									勹	几	

Table 2. Ōtake's table in 2015 (Ōtake, 2015, p. 100).

	a-	*ā-*	*ē-*	*o-*	*ŭ-*	*u-*	*ü-*	*i-*	*e-*	*ẽ-*	その他
-gʷ						久	习				
-q	刊	为									
-qʷ	呈			欠	余		夫				
-s	冬	公	岁	卡					仐		伞 *ez*, 丂 *ec*
-š	大	卅					吞	戈			戈 *ež*
-ĺ	夫		仝	矢				坐			
-r	木	左	扎	夾	刃	化	及	灻			
-l	亐	韭	子	早	住	用	丬	比		达 *ōl*, 丗 *eil*
-m	乃	厽	行	尤	丰	又		仐			
-n	�	夯	不	必	亦	雨	初	公		业 *ōn*
-ń	出		内	吞			伏	当			
-ŋ	兔	卅	业				同	奼			
-ŋʷ		各		杰	生	火	凡				
-ɣ							夲	公			
-ɣʷ					尺						

Table 3. Ōtake's table in 2015 (Ōtake, 2015, p. 100).

	a-	*ā-*	*ē-*	*o-*	*ŭ-*	*u-*	*ü-*	*i-*	*e-*	*ẽ-*	その他
-ʁ	土	幺									
-ʁʷ				公	卅		仃				
-nd	火			朩	乜			矢			
-rd		为	米	分							刹 *urj*
-ld	斤		闲					火			平 *ʊls*

Concerning the relation in the cultural heritage of 'time of day' and 'nighttime' with the nature, 'turning off' and 'turning on' the 'Sun', a conclusion can be drawn, that such processes associated in the mind of prehistoric Sino-Korean-Japanese pastoralist to the heating food, and also to ripening of the harvest. Those associations are so strong that alive in the modern languages today, the name of Japanese country contains word 'Sun' hence 'country of rising the Sun', as it often referred to the Japan. Therefore, minimal etymological analysis served as the unit for analysis astronomical (astrological) belief: also the night (see *suń* 'night' < **su-*ni* 'to extinguish the Sun') is related to the 'extinguishment' and 'fading off'*,* 'switching off', on the contrary 'Sun' (*ńä:r* 'day' < **ni-a:r* 'Sun exists') is related to making food (*ni-* (S2) 'to cook on high or low enough to eat'), fire and the time of the harvest, and hence, the existence per se (*a:r* 'to exist' in Khitan small script)*, ari-* 'to exist, being'*, ni* 'Sun' in Japanese.

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