

## SOME STAR NAMES IN MODERN TURKIC LANGUAGES-II\*

Yong-Söng LI\*\*

### 5. Names for ‘the Great Bear/the Big Dipper’

Ursa Major (the Great Bear) is the most widely known and oldest of the astronomical constellations. It is a circumpolar group as viewed from the middle latitudes of the Northern Hemisphere. One part of the configuration, a group of seven bright stars, which is pictured as the tail of the Great Bear, is commonly known in the United States as the Big Dipper which it resembles.<sup>1</sup>

#### 5.1 “seven + Noun/Suffix”

Many words comprised of the number ‘seven’ and a noun/suffix mean ‘the Great Bear’ in the Turkic languages. These words must have meant originally the seven bright stars of the Great Bear, i.e. the Big Dipper. As a matter of fact, the Great Bear as a constellation was not known to the Turks as well as to other peoples in many parts of the world in the past.

##### 5.1.1 *Yedigen* (< \**Yētigen*)

“**yéti:ge:n** Den. N. in **-ge:n**, apparently a Sec. f. of **-gü:n** (Collective), fr. **yéti**: (**yétti**:); lit. ‘seven together’; ‘the constellation Ursa Major, the Great Bear’. Survives in NE **yettegen** and the like R III 365: SW Osm. **yediger** (*sic*); Tkm. **yedigen**.” (ED 889b)

##### 5.1.1.1 *Yedigen* (< \**Yētigen*)

This word is found in the following languages:

\* For first part s. Vol. 62, Nr. 1; yazının ilk bölümü için bk. Cilt: 62, S. 2

\*\* Dr., Department of Asian Languages and Civilizations, College of Humanities, Seoul National University, Seoul, yulduz77@naver.com

1 For this paragraph see MEA 484b.

*Yedigen*: Trk. (dial.) (DS XI 4221a)

Tkm. (TmRSa 138b; TmDS 287a)

*Yetegen*: Nog. (NRS 107b)

*Yětëgen*: Bash. (BTH I 332b)

*Žetigen*: Kaz. (QTS 235b)

*Ĵetigen*: (KgRS 252a), ‘Great Bear; Little Bear’ (ME I 346)

*Četigen*: Khak. (Shor dial.)<sup>2</sup>

*Čēdigen*<sup>3</sup>: Chul. (M) (LČTJ 73)

*Yitiyen*: Sal. ‘Big Dipper’ (SHHSC 78a, 117b)

*Čitigen*: Khak. (XRSa 317b; XRSb 972b; RXS 366a; XRS 218a)

*Čidigen*<sup>4</sup>: Khak. (XRSa 316a)

*Šitigen*: Khak. (Kacha dial., Koibal subdial. of Kacha dial.)<sup>5</sup>

*Žitëyen*: Bash. (dial.) (BTDH 88a)

*Ĵetiĵegen*: Krch.-Blk. (KBRs 245b)

This word is also used together with *yuldiz* ‘star’:

*Yetegen (yuldiz)*: Nog. (RNS 298a)

*Yetegen yuldiz*: Nog. (NRS 447b)

*Yětëgen yöndöz*: Bash. (BTH I 332b; RBS I 98a)

*Yětëgen yöndözö*: Bash. (BRSb 231a)

*Yeŧigen yultus*: Sal. (SSJ 356, 365)

*Yeŧ<sup>h</sup>igen yultus*: Sal. (SSJ 356, 365)

*Ĵidëgen yöldiz*: Tat. (TtRS 187b, 761a; TTAS III 763b)

#### 5.1.1.2 “big *Yedigen*”

The word *Yedigen* is also used together with a word meaning ‘big’.

2 The informant was Oleg Petrovič Šulbajev. See Kim et al. (2011), pp. 232-233 and [http://altaireal.snu.ac.kr/askreal\\_v25/fieldresearch/m\\_viewphotothumb\\_full.asp?rcode=rid0063&ccode=c07&ecomment=Hakas+consultant,+Oleg+Petrovich+SHULBAJEV](http://altaireal.snu.ac.kr/askreal_v25/fieldresearch/m_viewphotothumb_full.asp?rcode=rid0063&ccode=c07&ecomment=Hakas+consultant,+Oleg+Petrovich+SHULBAJEV) (2013-02-02).

3 The long vowel is due to the elongated pronunciation of *e* in the open syllable.

4 Il’ja Prokop’jevič Topojev, the informant for Sagay dialect, also pronounced so. See Kim et al. (2011), pp. 231-232 and [http://altaireal.snu.ac.kr/askreal\\_v25/fieldresearch/m\\_viewphotothumb\\_full.asp?rcode=rid0063&ccode=c06&ecomment=Hakas+consultant,+Il'-ja+Prokop'jevich+TOPOJEV](http://altaireal.snu.ac.kr/askreal_v25/fieldresearch/m_viewphotothumb_full.asp?rcode=rid0063&ccode=c06&ecomment=Hakas+consultant,+Il'-ja+Prokop'jevich+TOPOJEV) (2013-02-02).

5 The informant for Kacha dialect was Aleksej Ivanovič Kotožekov. See Kim et al. (2011), pp. 239-240.

The informant for Koibal subdialect of Kacha dialect was Jekaterina Nikolajevna Tolmačeva. See Kim et al. (2011), pp. 233-234.

5.1.1.2.1 *Uli yedigen* (< \**Uluγ yētigen*)

This word is analyzed as *uli* ‘big’ + *yedigen* ‘Great Bear [correctly, seven stars]’. Thus, it has the literal meaning ‘big *Yedigen*’. This word is found in the following languages:

*Uli yedigen*: Tkm. (TmRSb 302a; BRTmS I 549b)

*Ölō yētēgen*: Bash. (BRSb 187b; BTH I 332b; BTDH 251a)

*Öli jidēgen* (*yöldiz*): Tat. (TtRS 761a)

5.1.1.2.2 *Čoŋ jetigen*

This word is analyzed as *čoŋ* ‘big’ (< Chin. 重 *zhòng* ‘heavy; weighty’) + *jetigen* (< \**yētigen*) ‘Great Bear [correctly, seven stars]’. Thus, it has the literal meaning ‘big *Jetigen*’. This word is found in Kyrgyz (RKGS 348a; ME I 346).

5.1.1.2.3 *Katta jetigen*

This word is analyzed as *katta* ‘big’ + *jetigen* (< \**yētigen*) ‘Great Bear [correctly, seven stars]’. Thus, it has the literal meaning ‘big *Jetigen*’. This word is found in Kyrgyz (Ichkilik subdial. of southern dial.)<sup>6</sup>

## 5.1.2 “seven brothers”

In a few Turkic languages, there are words with the literal meaning ‘seven brothers’ which must be a loan translation from Per. *haft birādarān* ‘the seven brothers, i.e. seven stars in the Great Bear’ (PED 1502a). However, the Azerbaijani word *Yeddigardaş* ‘Pleiades’ seems to be of different origin.

5.1.2.1 *Yedi kardeş*

This word is analyzed as *yedi* ‘seven’ + *kardeş* ‘brother’. Thus, it has the literal meaning ‘seven brothers’. This word is found in the following two languages:

*Yedi kardeş*: Trk. (dial.) (TSa 1614b; TEDb 1249b; RÇTİS 433b<sup>7</sup>)

*Yedikardeş*: Trk. (dial.) (TSb 2564b; DS XI 4221a)

*Yedikardaş*: Trk. (dial.) (DS XI 4221a)

*Yedigardaş*: Trk. (dial.) (DS XI 4221a)

*Yeddigardaş*: Trk. (dial.) (DS XII 4817b)<sup>8</sup>

*Yeddigardaş*: Az. ‘Pleiades’ (ARS 190a; RAS II 471b; ADIL IV 568a)

*Yedikardeşler*: Trk. (dial.) (DS XI 4221a, 4221b)

*Yedikardaşlar*: Trk. (dial.) (DS XI 4221a, 4221b)

6 The informant was Karamat (Xamid kızı) Xamidova. See Kim et al. (2011), pp. 188-189.

7 The information is not given here that this is a dialectal form.

8 This word is from Iğdır. Therefore, it is an Azerbaijani word.

*Yeddigardaşlar*: Trk. (dial.) (DS XI 4221a)<sup>9</sup>

This word is also used together with *ulduz* ‘star’:

*Yeddigardaş ulduzu*: Az. ‘Pleiades’ (ADIL III 598b)

The Pleiades is a group of stars resembling a little dipper in the constellation of Taurus and early accounts refer to the Pleiades in terms of seven stars.<sup>10</sup> Perhaps for this reason, *Yeddigardaş* means ‘the Pleiades’ in Azerbaijani, whereas its counterparts mean ‘the Great Bear’ in the Turkish dialects.

#### 5.1.2.2 *Yëtti âyayni*

This word is analyzed as *yëtti* ‘seven’ + *âyayni* ‘brother’. Thus, it has the literal meaning ‘seven brothers’. This word is found in Uzbek:

*Yëtti âyayni* (URS 140b; UED 33b; ÖTIL I 251b; ÖTIL II 556c)

*Yëttiâyayni* (RUS 357a)

#### 5.1.2.3 *Yëti lälalar*

This word is analyzed as *yëti* ‘seven’ + *läla* ‘brother’ + *-lar* ‘plural suffix’. Thus, it has the literal meaning ‘seven brothers’. This word is found in Khalaj (WCh 224b).

#### 5.1.3 *Yetti yulduz* (< \**Yëti yultuz*)

In 五體清文鑑 *Wu-ti-qing-wen-jian*, the Uyghur word for ‘the Big Dipper’ is given as *Yetti yulduz* (WQ No. 65), which is analyzed as *yetti* ‘seven’ + *yulduz* ‘star’. Thus, it has the literal meaning ‘seven stars’. This word is found in the following languages:

*Yetti yulduz*: Kum. (KmRS 134b; RKmS 397a)

*Čiti čiltis*: Khak. (XRSa 326b; XRSb 1020b)

*Šeti šiltis*: Khak. (Kyzyl dial.)<sup>11</sup>

*Čedi-sildis*: Tuv. (TvRSb 525b)

This word can be compared with Mong. *Doluyan odun* ‘Great Bear’ (MED 260a) and Chin. 七星 *qī-xīng* ‘Big Dipper’ (“seven stars”).

#### 5.1.4 *Yëtti qarâqçi* (< \**Yëti qaraqçi*)

This word is analyzed as *yetti* ‘seven’ + *qarâqçi* ‘robber’. Thus, it has the literal meaning ‘seven robbers’. This word is found in the following languages<sup>12</sup>:

9 This word is from Iğdır. Therefore, it is an Azerbaijani word.

10 See MEA 333b.

11 The informant was Jefrosinija Vasilijevna Itigečeva. See Kim et al. (2011), pp. 237-238.

12 Uyghur also has a word *Yette qaraqçi* ‘the Great Bear’ according to the internet information. But, there is no such word in the dictionaries.

*Yetti qaraqçı*: Uzb. (URS 140b; UED 33b; ÖTIL I 251b; ÖTIL II 556c)

*Ĵeti qaraqçı*: Kyr. (KGRS 252a, 347b)

*Žeti qaraqši*: Kaz. (KRSb 482b)

Kkp. (RKkS 418b)

*Žetiqaraqši*: Kaz. (QTS 236a)

This word is also used together with *žuldiz* ‘star’:

*Žeti qaraqši žuldiz*: Kaz. (KED 102a)

Kkp. (KkRS 260b)

#### 5.1.5 *D’eti qān* (< \**Yēti qayan*)

This word is analyzed as *d’eti* ‘seven’ + *qān* ‘khan’. Thus, it has the literal meaning ‘seven khans’. This word is found in the following three languages in Southern Siberia:

*D’eti qān*: Alt.<sup>13</sup> (RAIS 290a)

*D’eti-qān*: Alt. (ORS 54a)

*Čedi-xān*: Tuv. (TvRSa 503b; TvRSb 525b; RTvSa 265a; RTvSb 250a<sup>14</sup>)

*Č’edi-qan*: Tof. (TfRS 120b, 178a)

#### 5.1.6 *Yediger* (< \**Yētiger*)

This word is found in the following two languages:

*Yediger*: Trk. (TEDb 1249b), (dial.) (DS XI 4221a)

*Yedigir*: Trk. (TSa 1614b; TSb 2564b; RÇTİS 433b; TEDa 506b; TRS 920a; ETD 44a)

*Yediker*: Trk. (dial.) (DS XI 4221a, 4221b)

*Yedikör*: Trk. (dial.) (DS XI 4221a, 4221b)

*Žitēger*: Bash. (dial.) (BTDH 88a)

#### 5.1.7 *Yedi yarlar*

This word is analyzed as *yedi* ‘seven’ + *yar* ‘friend; lover’ (< Per. *yār* ‘a friend, lover, companion, comrade; an assistant, defender; ...’ (PED 1525a)) + *-lar* ‘plural suffix’. Thus, it has the literal meaning ‘seven friends/lovers’.

This word is found in Turkish:

*Yedi yarlar* (TEDb 1249b; RÇTİS 433b)

*Yediyarlar* (dial.) (DS XI 4221a, 4221b, 4222a)

*Yediyar* (dial.) (DS XI 4221a, 4221b, 4222a)

13 Tamara Jemel’janovna Orsulova and her husband Trifon Dmitrijevič Belejev, the informants for Telengit dialect, also pronounced so. See Kim et al. (2011), pp. 252-253, 259-260.

14 In the form of *Čedi-xān* due to an editorial error.

### 5.1.8 *Ĵeti arqar*

This word is analyzed as *Ĵeti* ‘seven’ + *arqar* ‘argali’.<sup>15</sup> Thus, it has the literal meaning ‘seven *argalis*’. This word is found in the following two languages:

Uyg. Yette arxar (UjRSb 29a)

Kyr. Ĵeti arqar (KgRS 68b, 252a; RKgS 348a)

In Kyrgyz, there are two more star names with *arqar*:

*Altı arqar* ‘Little Bear’ (KgRS 52b, 68b; RKgS 348a; “six *argalis*”)

*Üç arqar* ‘Libra’ (KgRS 68b; “three *argalis*”).

### 5.1.9 *Ĵetemen yıldız üyüri*

See 4.13.

### 5.1.10 *Ĵetegeyli*

This word is found in Karachay-Balkar<sup>16</sup>:

*Ĵetegeyli* (KBRS 244a; RKBS 48a, 267a)

*Ĵetegeyle* (KBRS 244a)

### 5.1.11 *Čedi burxan*

This word is analyzed as *čedi* ‘seven’ + *burxan* ‘god’.<sup>17</sup> Thus, it has the literal meaning ‘seven gods’. It is found in Tuvan (Uriankhai dial.)<sup>18</sup>. It is certainly a loan translation from Mong. *Doluyan burqan* ‘Great Bear’ (MED 260a; “seven gods”).

### 5.1.12 *Yette tiken*

In 五體清文鑑 *Wu-ti-qing-wen-jian*, the Uyghur word for ‘the Big Dipper’ is given as *Yetti tiken* (WQ No. 66), which is analyzed as *yetti* ‘seven’ + *tiken*

15 “**arka:r** prob. always ‘the mountain sheep, *Ovis argali*’, although the Ar. words used by *Kaş.* normally mean ‘mountain goat, chamois’ (it is likely that the animal was exotic to Arabs and had no specific name in Ar.) S.i.s.m.l., see *Shcherbak*, p. 117, usually as a generic term without indication of sex. The Mong. synonym *arġali* is perhaps a l.-w. fr. this word.” (ED 216b).

16 This word is found as *Ĵetigelle* for Balkar in Pröhle 1915: 276. This form is certainly developed from *Ĵetigenle* < *Ĵetigen* ‘Great Bear’ + *-le* ‘plural suffix’ (< *-ler*). Therefore, it should be the original form of *Ĵetegeyli*.

17 “**burxan** compound of Chinese *fu* (*Giles* 3,589 [佛]) and presumably **xan**. The Chinese character was the one chosen to transcribe Buddha, and was pronounced approximately *bur* in NW China in VII-VIII.” (ED 360b)  
Cf. Mong. *burqan* ‘Buddha, god, deity; image of Buddha’ (MED 139b; < Turkic). See Dorerfer 1965: 283.

18 The informant was Baasanjab. See Kim et al. (2008), pp. 326-327.

‘thorn’.<sup>19</sup> Thus, it has the literal meaning ‘seven thorns’. This word is found as *Yette tiken* ‘Big Dipper’ (UyXL 616a; XUyL 28b) in modern Uyghur.

### 5.1.13 *Yette qozuq*

This word is analyzed as *yette* ‘seven’ + *qozuq* ‘stake’. Thus, it has the literal meaning ‘seven stakes’. This word is found in modern Uyghur (UyXL 616a; UjRSb 783b).

### 5.1.14 *Čediber*

This word is found in Shor:

*Čediber* (ŠRRŠS 61b)

*Čettiber*<sup>20</sup> (ŠRRŠS 104a)

### 5.1.15 *Yitelč'in*

This word is found in Western Yugur:

*Yet<sup>h</sup>elč'in* ‘Big Dipper, Great Bear’ (XYHC 258b)

*Yitelč'in* ‘Big Dipper, Great Bear’ (XYHC 264b)

*Yiteltšin* ‘Big Dipper, Great Bear’ (XYHC 264b)

## 5.2 “big bear”

The words with the literal meaning ‘big bear’ found in several modern Turkic languages are certainly the loan translations from the non-Turkic languages. The words with this literal meaning are also found in other languages, e.g. Eng. *Great Bear*, Ger. *Großer Bär*, Fr. *Grande Ourse*, Russ. *Большая Медведица* ‘Great Bear’ (“big bear”), Lat. *Ursa Maior*, Sp. *Osa Mayor*, Per. *dubbi akbar* ‘Greater Bear’ (PED 502b), Ar. *al-dubb al-akbar* ‘Great Bear’ (DMWA 269b; “bigger bear”).

### 5.2.1 *Büyük ayı*

This word is analyzed as *büyük* ‘big’<sup>21</sup> + *ayı* ‘bear’.<sup>22</sup> Thus, it has the literal meaning ‘big bear’. This word is found in the following languages:

*Büyük ayı*: Trk. (TSa 239a; TEDb 209b)

19 “**tiken** (d-) crasis of \***tikge:n** Dev. N./A. fr. **tik-**; ‘thorn’.” (ED 483b).

20 This should be an editorial error for *Četiber* or *Čediber*.

21 “**bedük** N./A.S. fr. **bedü-**; ‘big, great’; practically syn. w. **uluğ**, q.v. If there is any difference between the meanings of the two words, it is perhaps that **bedük** was originally ‘physically big’, while **uluğ** was ‘great’ in a wider sense.” (ED 302b)  
“**bedü-**: ‘to be, or become, big, great, etc.’ Survives only(?) in NE Tuv. **bedi-** and SW Osm. **büyü-**.” (ED 299b).

22 “**adığ** ‘bear’ (animal). S.i.a.m.l.g. in various forms, usually **ayı/ayu**, cf. *Shcherbak*, p. 130; sometimes also with metaph. meanings like ‘the constellation of the Great Bear’, and, in Osm. ‘a clumsy fellow’.” (ED 45b).

*Büyükayı*: Trk. (TSb 427b; RÇTİS 65b; TEDa 89a; TRS 139a; ETD 233a; RTS 392a)

*Büyük ayuv*: Ur.<sup>23</sup>

*Būk ayī*: Gag.<sup>24</sup>

*Böyük ayī bürjü*: Az. (ARS 72b; ADIL I 371b, 713b; ADIL I 371b, 713b; “the constellation of Big Bear”; *bürjü* < *bürj* ‘constellation’ (< Ar. *burj* ‘tower; castle; sign of the zodiac’ (DMWA 50b)) + *-ü* ‘possessive suffix of the third person’)

### 5.2.2 *Kättä äyiq*

This word is analyzed as *kättä* ‘big’ + *äyiq* ‘bear’. Thus, it has the literal meaning ‘big bear’. This word is found in Uzbek:

*Kättä äyiq* (ÖTIL I 251b)

*Kättä äyiq yulduzi* (RUS 357a; *yulduzi* < *yulduz* ‘star’ + *-i* ‘possessive suffix of the third person’)

### 5.2.3 *Čoŋ ayū*

This word is analyzed as *čoŋ* ‘big’ (< Chin. 重 *zhòng* ‘heavy; weighty’) + *ayū* ‘bear’. Thus, it has the literal meaning ‘big bear’. This word is found in the following languages:

*Čoŋ ayū*: Kyr. (Talas subdial. of northern dial.)<sup>25</sup>

*Čoŋ äyiq yultuzlar türkümi*: Uyg. (XUyL 143a; “the constellation of Great Bear”; *yultuzlar türkümi* ‘constellation’ < *yultuz* ‘star’ + *-lar* ‘plural suffix’ + *türküm* ‘group, heap’ + *-i* ‘possessive suffix of the third person’)

### 5.2.4 *D’ān ayu*

This word is analyzed as *d’ān* ‘big’<sup>26</sup> + *ayu* ‘bear’. Thus, it has the literal meaning ‘big bear’. This word is found in Altay Turkic:

23 The informant was Valerij Ivanovič Kior. See Kim et al. (2008), pp. 343-347.

24 The informant was Fedora Ivanovna Arnaut. See Kim et al. (2008), pp. 340-341 and [http://altaireal.snu.ac.kr/askreal\\_v25/fieldresearch/m\\_viewphototthumb\\_full.asp?r-code=rid0027&cocode=c08&ecomment=Gagauz+consultant,+Fedora+Ivanovna+ARNAUT](http://altaireal.snu.ac.kr/askreal_v25/fieldresearch/m_viewphototthumb_full.asp?r-code=rid0027&cocode=c08&ecomment=Gagauz+consultant,+Fedora+Ivanovna+ARNAUT) (2013-02-02).

25 The informant was Toktobübü (Biygazi kızı) Akmatova. See Kim et al. (2011), pp. 186-187.

26 “**yağa:n** ‘elephant’; cf. **yaña:n**; the fact that elephants were exotic to the early Turks, and the alternative pronunciations, suggest that this is a l.-w. of unknown origin.” (ED 904a) “**yaña:n** ‘elephant’; an obvious l.-w. of unknown origin, also spelt **yağa:n**, **yaña:**, q.v.” (ED 952a) “**yaña:** ‘elephant’; pec. to Uyğ.; an obvious l.-w. of unknown origin, also spelt **yağa:n**, **yaña:n**, qq.v.” (ED 943b)

For the semantic change ‘big’ < ‘elephant’ cf. Eng. *mammoth* ‘large kind of elephant now



*D'ān ayu* (Altay-kizhi dial.)<sup>27</sup>

*Ñān ayu* (Chalkandu dial.)<sup>28</sup>

### 5.2.5 *Uluγ aba*

This word is analyzed as *uluγ* ‘big’<sup>29</sup> + *aba* ‘bear’.<sup>30</sup> Thus, it has the literal meaning ‘big bear’. This word is found in Khakas (Kyzyl dial.)<sup>31</sup>.

### 5.2.6 *Dübb-i ekber*

This loanword from Per. *dubbi akbar* ‘Greater Bear’ (PED 502b; < Ar. *al-dubb al-akbar* ‘Great Bear’ (DMWA 269b; “bigger bear”)) is found in the following two languages:

*Dübbüekber*: Trk. (TSa 416a; TSb 732a; TEDa 147b; RÇTİS 107b; TRS 252b)

*Dübb-i ekber*: Trk. (TEDb 316a)

Az. (ADIL I 713b)

### 5.3 “dipper/ladle star”

The seven brightest stars of Ursa Major, which is pictured as the tail of the Great Bear, is commonly known in the United States as the Big Dipper which it resembles.<sup>32</sup> These stars are called 北斗星 *běi-dǒu-xīng* “the star of Northern Dipper” in Chinese (XHC 79b; XHD 63b). They are known as 북두칠성 (Bukdu chilseong) (< Chin. 北斗七星 *běi-dǒu qī-xīng* “Seven Stars of the Northern Dipper”) or 북두성 (Bukduseong) (< Chin. 北斗星 *běi-dǒu-xīng*) in Korean. The words with the literal meaning ‘dipper/ladle star’ are found in the following two languages.

#### 5.3.1 *Sovaq<sup>h</sup> yultus*

This word is analyzed as *sovaq<sup>h</sup>* ‘soup ladle, water ladle’ + *yultus* ‘star’. Thus, it has the literal meaning ‘ladle star’. This word is found in Western Yugur:

---

extinct; (attrib) immense’ (Hornby 1975: 524a).

27 The informant was Ljudmila Mixajlovna Abyševa. See Kim et al. (2011), pp. 253-254.

28 The informant was Aleksej Angelejevič Sumačakov. Kim et al. (2011), pp. 255-256.

29 “**uluğ** ‘big, great’, physically and metaph., including such usages as ‘grand(father); eldest (son)’.” (ED 136b).

30 “**apa**: ‘bear’ (animal); ‘bear’ is normally **adiğ**, but there is a good deal of folklore, mixed up with an ancestor-cult, about bears in Siberia, and this word is prob. merely **1 apa**: used metaph.; survives in NE Kaç., Koib., Sag. R I 620 and Khak. **aba**, same meaning.” (ED 5b). The form **adiğ** is an editorial error for **adiğ**.

31 The informant was Jefrosinija Vasilijevna Itigečeva. See Kim et al. (2011), pp. 237-238.

32 See MEA 484b.

‘Big Dipper, Great Bear’ (XYHC 275a, 331a)

### 5.3.2 *Altär šältär*

This word is analyzed as *altär* ‘scoop, dipper, ladle’ + *šältär* ‘star’. Thus, it has the literal meaning ‘scoop/dipper/ladle star’. This word is found in Chuvash:

‘Great Bear’ (ČRSa 30a, 352a; ČRSb 31c, 402a)

### 5.3.3 “big dipper/ladle (star)”

Apart from Eng. *Big Dipper*, the word with this literal meaning is also found in Russian as *Большой Ковш* ‘Big Dipper’ (“big dipper”). These stars are called *Grande Casserole* in French, which has the literal meaning ‘big saucepan/pan’. The words with the literal meaning ‘big dipper/ladle’ are found in the following two languages.

#### 5.3.3.1 *Uluγ omaš*

This word is analyzed as *uluγ* ‘big’ + *omaš* ‘scoop, dipper, ladle’. Thus, it has the literal meaning ‘big scoop/dipper/ladle’. This word is found in Shor:

‘Big Dipper’ (Mrass dial.)<sup>33</sup>

#### 5.3.3.2 *Pisäk altär šältär*

This word is analyzed as *pisäk* ‘big’ + *altär* ‘scoop, dipper, ladle’ + *šältär* ‘star’. Thus, it has the literal meaning ‘big scoop/dipper/ladle star’. This word is found in Chuvash:

‘Great Bear’ (RČS 336a)

### 5.4 *Ürker*

In 五體清文鑑 *Wu-ti-qing-wen-jian*, the Uyghur word for ‘the seventh star (Alkaid) of the Big Dipper’ is given as *Üker yulduz* (WQ No. 68). This word is found as follows in modern Uyghur:

*Ürker* ‘Great Bear’ (UjRSb 121a)

*Üker* ‘Great Bear’ (UjRSb 131b<sup>34</sup>; UyXL 757b)

*Hüke* ‘(dial.) Great Bear’ (UjRSb 765c)

*Ürkey* ‘(dial.) Great Bear’ (UjRSb 121a)

This word is in the form of *Ülker* etc. and means ‘Pleiades’ in the other Turkic languages. The Pleiades is a group of stars resembling a little dipper<sup>35</sup>

33 The informant was Vladimir Jegorovič Tannagašev. See Kim et al. (2008), pp. 315-318. He said us that the literal translation of Russ. *Большая Медведица* is *Uluγ apšaq* in Shor.

34 This word is mentioned as a dialectal form.

35 See MEA 333b.

and perhaps this is the reason why *Ūrker* ~ *Ūker* means ‘Great Bear’ in (modern) Uyghur.

See 7.1.

5.5 “the star of a corn chandler’s shop”

5.5.1 *Araņas sulus*

This word is analyzed as *araņas* ‘corn chandler’s shop’ (< Mong. *araṅṅa* ‘platform; shed; an elevated platform or tower used in hunting wild animals; oil derrick’ (MED 49a)) + *sulus* ‘star’. Thus, it has the literal meaning ‘the star of a corn chandler’s shop’. This word is found in the following languages:

Yak. ‘Great Bear’ (JRS 45a), ‘Orion’ (JRS 341b)

Dol. ‘a star in the Dolgan *Oloṅkos*<sup>36</sup>’ (DW 36), ‘The expression *araņas sulus* means probably not only a star (DW 36), but rather the whole constellation of the Great Bear (An. ÈS 360f.)’ (DWS 32)

5.5.2 *Uluxan araņas sulus*

This word is analyzed as *ulaxan* ‘big’ + *araņas* ‘corn chandler’s shop’ (< Mong.) + *sulus* ‘star’. Thus, it has the literal meaning ‘the big star of a corn chandler’s shop’. This word is found in Yakut:

‘Great Bear’ (RJS 271b).

5.6 *Čoban araba*

This word is analyzed as *čoban* ‘shepherd’ + *araba* ‘cart’. Thus, it has the literal meaning ‘shepherd cart’. It is found in Urum:

‘Great Bear’ (US 586b)

This word may be a wrong translation of Ukrainian *Чумацький Віз* ‘Great Bear’ (“milky cart”).

5.7 *Taraza žultuz*

This word is analyzed as *taraza* ‘balance, scales; Libra’ (< Per. *tarāzū* ‘a balance, scale, weight; ...’ (PED 291a)) + *žultuz* ‘star’. Thus, it has the literal meaning ‘scales/balance star’. This word is found in modern Uyghur with the meaning of ‘Great Bear’ (UjRSb 270c, 485a).

This word is given in the form of *Tarazu yulduz* ‘a generic term for Gamma Ursae Minoris and Beta Ursae Minoris’ (WQ No. 63) and ‘Orion’s Belt’ (WQ No. 110) in 五體清文鑑 *Wu-ti-qing-wen-jian*.

<sup>36</sup> *Oloṅko* means ‘tale, story’.

### 5.8 *Üş şiltis*

This word is analyzed as *üş* ‘three’ + *şiltis* ‘star’. Thus, it has the literal meaning ‘three stars’. It is found in Khak. (Kyzyl dial.)<sup>37</sup>.

This word means almost certainly the three pairs of stars ( $\iota$  and  $\kappa$ ;  $\lambda$  and  $\mu$ ;  $\nu$  and  $\zeta$ ) at the sole parts of the Great Bear. These three pairs of stars are called 삼태성(三台星, Samtaeseong) in Korean. Per. *se x<sup>w</sup>āharān* ‘three stars in the Great Bear’ (PED 711a; “three sisters”), *se duxtar* ‘id.’ (PED 711a; “three daughters/girls”).

This word can be compared with Uyg. *Üč yultuz* ‘Orion’s Belt [three bright stars across Orion]’ (XUyL 708b), Chin. 三星 *sān-xīng* ‘id.’ (XHC 1654b-1655a; XHD 1387a). Uyg. *Üč yultuz* must be a loan translation from Chin. 三星 *sān-xīng*.

By the way, there are words *Üçkardeş*, *Üçkardaş* (DS XI 4056b), *Üçgardaş* (DS XI 4056a, 4056b) ‘three stars in the sky which look as if they are on the corners of a triangle’ (DS XII 4791a), *Üçkardeş* ‘three stars forming a triangle shape in the sky’ (DS XII 4791a) in the dialects of Turkish, which are analyzed as *üç* ‘three’ + *kardeş/kardaş/gardaş* ‘brother’. Thus, these words have the literal meaning ‘three brothers’.

### 5.9 *Sarayyanla*

See 6.7.

## 6. Names for ‘the Little Bear’

Ursa Minor is the astronomical constellation Little Bear. It is a circumpolar constellation whose brightest star, Polaris, is almost at the north celestial pole. Seven of the eight stars appear to form a dipper, hence the constellation is alternately known as the Little Dipper.<sup>38</sup>

### 6.1 “small bear”

The words with the literal meaning ‘small bear’ found in several modern Turkic languages are certainly the loan translations from the non-Turkic languages. The words with this literal meaning are also found in other languages, e.g. Eng. *Little Bear*, Ger. *Kleiner Bär*, Fr. *Petite Ourse*, Russ. *Малая Медведица* ‘Little Bear’ (“small bear”), Lat. *Ursa Minor*, Sp. *Osa Menor*, Per. *dubbi aşyar* Lesser Bear’ (PED 502b), Ar. *al-dubb al-aşyar* ‘Little Bear’ (DMWA 269b; “lesser bear”).

37 The informant was Jefrosinija Vasilijevna Itigečeva. See Kim et al. (2011), pp. 237-238.

38 For this paragraph see MEA 484b-485a.

### 6.1.1 *Küçük ayı*

This word is analyzed as *küçük* ‘small’<sup>39</sup> + *ayı* ‘bear’. Thus, it has the literal meaning ‘small bear’. This word is found in the following languages:

*Küçük ayı*: Trk. (TSa 943b, 944a; TEDb 693b; TRS 579b)

*Küçükayı*: Trk. (TSb 1553a; TEDa 315a; RÇTİS 244b; TRS 579b; RTS 392a)

*Kičik ayi bürjü* ‘small bear constellation’: Az. (ADIL I 713b; *bürjü* < *bürj* ‘constellation’ (< Ar. *burj* ‘tower; castle; sign of the zodiac’ (DMWA 50b)) + *-ü* ‘possessive suffix of the third person’)

*Kičik äyiq*: Uzb. (ÖTIL I 251b)

*Kičik äyiq yulduzi*: Uzb. (RUS 349b, 357a; *yulduzi* < *yulduz* ‘star’ + *-i* ‘possessive suffix of the third person’)

*Kičik äyiq yultuzlar türkümi*: Uyg. (XUyL 929b; ‘the constellation of Little Bear’; *yultuzlar türkümi* ‘constellation’ < *yultuz* ‘star’ + *-lar* ‘plural suffix’ + *türküm* ‘group, heap’ + *-i* ‘possessive suffix of the third person’)

### 6.1.2 *Dübb-i eşyer*

This loanword from Per. *dubbi aşyar* ‘Lesser Bear’ (PED 502b; < Ar. *al-dubb al-aşyar* ‘Little Bear’ (DMWA 269b; ‘lesser bear’)) is found in the following two languages:

*Dübbüaşgar*: Trk. (TSa 416a; TSb 732a; TEDa 147b; RÇTİS 107b; TRS 252b)

*Dübb-i aşgar*: Trk. (TEDb 316a)

*Dübb-i eşyer*: Az. (ADIL I 713b)

### 6.2. “small + seven + Noun/Suffix”

Many words comprised of the word ‘small’, the number ‘seven’ and a noun or suffix mean ‘the Little Bear’ in the Turkic languages. These words must have meant originally the seven bright stars of the Little Bear, i.e. the Little Dipper.

#### 6.2.1 *Kiči yedigen* (< \**Kičig yētigen*)

This word is analyzed as *kiči* ‘small’ + *yedigen* ‘Great Bear (correctly, seven stars)’. Thus, it has the literal meaning ‘small *Yedigen*’. This word is found in the following languages:

*Kiči yedigen*: Tkm. (TmRSb 302a; BRTmS I 549b)

*Kiči jetigen*: Kyr. (RKgS 341a, 348a; ME I 346)

39 **kiçig** ‘small’, with some extended meanings like ‘puppy’. S.i.a.m.l.g. with some phonetic changes; SW Osm. alone has the form **küçük**; ...” (ED 696a).

*Kiškey yetegen*: Nog. (RNS 298a)

*Kěčě jiděgen (yöldiz)*: Tat. (TtRS 761a)

*Kěšě yětēgen*: Bash. (BRSb 187b; BTH I 332b, 491b)

*Kičine jētigen*: Kyr. (Ichkilik subdial. of southern dial.)<sup>40</sup>

#### 6.2.2 *Kičik yètti qarâqçı*

This word is analyzed as *kičik* ‘small’ + *yetti* ‘seven’ + *qarâqçı* ‘robber’. Thus, it has the literal meaning ‘small seven robbers’. This word is found in the following two languages.

*Kičik yètti qarâqçı*: Uzb. (ÖTIL I 251b; ÖTIL II 556c)

*Kiši žeti qaraqşı*: Kkp. (RKkS 418b)

#### 6.2.3 *Kičik yètti âyayni*

This word is analyzed as *kičik* ‘small’ + *yètti* ‘seven’ + *âyayni* ‘brother’. Thus, it has the literal meaning ‘small seven brothers’. This word is found in Uzbek (ÖTIL I 251b; ÖTIL II 556c; URS 140b; UED 33b).

#### 6.2.4 *Gičči yetti yulduz*

This word is analyzed as *gičči* ‘small’ + *yetti* ‘seven’ + *yulduz* ‘star’. Thus, it has the literal meaning ‘small seven stars’. This word is found in Kumyk (RKmS 397a).

#### 6.2.5 *Biče čedi-xān* ‘small seven khans’

This word is analyzed as *biče* ‘small’ + *čedi* ‘seven’ + *xān* ‘khan’. Thus, it has the literal meaning ‘small seven khans’. This word is found in Tuvan (RTvSb 250a).

#### 6.2.6 *Aday čitigeni*

This word is analyzed as *aday* ‘dog’ + *čitigen* ‘Great Bear (correctly, seven stars)’ + *-i* ‘possessive suffix of the third person’. Thus, it has the literal meaning ‘dog’s *čitigen*’. This word is found in Khakas (XRSb 972b; XRS 218b).

In connection with this, there are following Altay Turkic (dialects of Altay-kizhi, Teleut and Chalkandu) words in VW III 365:

*yetteyen* ‘seven stars’

*at yetteyen* ‘Great Bear’ (“horse<sup>41</sup> *yetteyen*”)

*it yetteyen* ‘Little Bear’ (“dog *yetteyen*”).

Therefore, *Aday čitigeni* implies ‘small *čitigen*’.

40 The informant was Karamat (Xamid kızı) Xamidova. See Kim et al. (2011), pp. 188-189.

41 Cf., Mong. *mori(n)* ‘horse, equine; (chiefly in names of plants and animals) great, big, large (cf. *üker*); knight (in chess)’ (MED 543b).

### 6.3 *Pěčěk altār śältār*

This word is analyzed as *pěčěk* ‘small’ + *altār* ‘scoop, dipper, ladle’ + *śältār* ‘star’. Thus, it has the literal meaning ‘small scoop/dipper/ladle star’. This word is found in Chuvash (RČS 336a).

### 6.4 *Aččigiy arañas sulus*

This word is analyzed as *aččigiy* ‘small’ + *araņas* ‘corn chandler’s shop’ (< Mong. *araņa* ‘platform; shed; an elevated platform or tower used in hunting wild animals; oil derrick’ (MED 49a)) + *sulus* ‘star’. Thus, it has the literal meaning ‘the small star of a corn chandler’s shop’. This word is found in Yakut (RJS 271b).

### 6.5 *Altī arqar*

This word is analyzed as *altī* ‘six’ + *arqar* ‘argali’. Thus, it has the literal meaning ‘six *argalis*’. This word is found in Kyrgyz (KgRS 52b, 68b; RKgS 348a).

In Kyrgyz, there are two more star names with *arqar*:

*Ĵeti arqar* ‘Great Bear’ (KgRS 68b, 252a; RKgS 348a; “seven *argalis*”)

*Üč arqar* ‘Libra’ (KgRS 68b; “three *argalis*”).

### 6.6 *Üč mīyyaq*

This word is analyzed as *üč* ‘three’ + *mīyyaq* ‘female maral’. Thus it has the literal meaning ‘three female marals’. It is found in Altay Turkic (RAIS 290a).

This word can be compared with Khak. *Üs muyyax* ‘Orion’ (XRSa 256b<sup>42</sup>; XRSb 256b; “three female marals”), Mong. *Furban maral* ‘Orion’s Belt’ (MED 529a; “three marals”), and Kyr. *Üč arqar* ‘Libra’ (KgRS 68b; “three *argalis*”).

### 6.7 *Sarayyanla*<sup>43</sup>

This word is found in Karachay-Balkar:

*Sarayyanla*: Blk. ‘Great Bear’ (KBRS 542a)

*Sarayyalla*: Krch.-Blk. ‘Little Bear’ (RKBS 267a)

### 6.8 *Ĵinaza žultuz*

This word is analyzed as *Ĵinaza* ‘bier’ (< Ar. *ĵināza*, *ĵanāza* ‘bier; funeral procession’ (DMWA 141a)) + *žultuz* ‘star’. Thus, it has the literal meaning ‘bier star’. This word is found in modern Uyghur (UjRSb 377a, 485a).

42 This word is given as *Üs muyyas* due to an editorial error.

43 The meaning of this word must be ‘Little Bear’, not ‘Great Bear’. The last syllable *-la* must be the plural suffix *-la* (< *-lar*).

In Arabic the Great Bear and the Little Bear are called *banāt na 'š aš-kubrā* “the daughters of the greater bier” and *banāt na 'š aš-šuḡrā* “the daughters of the lesser bier” (DMWA 979b) respectively. In connection with this, Allen (1899) writes as follows:

“The Hebrew word ‘**Āsh** or ‘**Ayish** in the *Book of Job*, ix, 9, and xxxviii, 32, supposed to refer to the Square in this constellation [Ursa Major] as a **Bier**, not a Bear, was translated **Arcturus** by Saint Jerome in the *Vulgate*; and this was adopted in the version of 1611 authorized by King James.” (p. 422)

“The Hebrew ‘**Āsh**, or ‘**Ayish**, is reproduced by, or was derived from, the Arabic **Banāt Na‘ash al Kubrā**, the Daughters of the Great Bier, *i.e.* the Mourners,— the **Benenas**, **Benethasch**, and **Beneth As** of Chilmead and Christmannus,— applied to the three stars in the extreme end of the group,  $\eta$  being Al **Kā'id**, the Chief One; from this came Bayer’s **El Keid** for the whole constellation.” (p. 432)

“The Arabians knew Ursa Minor as **Al Dubb al Aṣḡhar**, the Lesser Bear, — Bayer’s **Dhub Elezguar**, and Chilmead’s **Dub Alasgar**,— although earlier it was even more familiar to them as another **Bier**; and they called the three stars in the tail of our figure **Banāt al Na‘ash al Ṣuḡhrā**, the Daughters of the Lesser Bier.” (p. 449)

In PED 1411b, the entry of Arabic loanword *na 'š* is given as follows:

“*na 'sh* (v.n.), Lifting up; a bier with a dead body (when empty it is called *sarīr*); a litter in which a sick person is carried; a catafalque whereon a royal corpse is laid; —*banāti na 'sh*, The constellation of the Bear, or rather the three stars out of seven which go in front of the other four, these being called *na 'sh* “bier;” there are two constellations of the name, distinguished as *kubrā* “the greater,” and *ṣuḡhrā* “the lesser.””

### 6.9 Üger

This word is found in Tuvan:

‘Little Bear’ (TvRSa 427a), ‘Pleiades’ (TvRSb 443a)

This word is in the form of *Ülker* etc. and means ‘Pleiades’ in the other Turkic languages. The Pleiades is a group of stars resembling a little dipper<sup>44</sup> and perhaps this is the reason why *Üger* means ‘Little Bear’ (TvRSa 427a) and ‘Pleiades’ (TvRSb 443a) in Tuvan.

See 7.1.

44 See MEA 333b.



## 7. Names for ‘the Pleiades’

The Pleiades is a beautiful group of stars resembling a little dipper<sup>45</sup>, in the constellation of Taurus, known since earliest records.<sup>46</sup> In Greek mythology, the Pleiades were the seven daughters of Atlas and Pleione, who were called Alcyone, Asterope, Celaeno, Electra, Merope, Maia and Taygete. These names along with Atlas and Pleione, have been given to brighter stars in the cluster.<sup>47</sup> Though early accounts refer to the Pleiades in terms of seven stars, only six are now conspicuous to the unaided eye, which raises a theory that one, the lost Pleiad, has faded.<sup>48</sup>

### 7.1 *Ülker*

“**ülker** ‘the constellation of the Pleiades’; *Kaş.* alone gives a second meaning, but since most Turkish star names are names of other objects (‘black bird’, ‘white stallion’, etc.) used metaph. it is possible that this was the original meaning. S.i.a.m.l.g. usually as **ülker** and the like. Forms like **ürker** in some NC and SC languages are a fairly recent corruption.” (ED 143a)

In connection with this name, Clauson (1964: 363) writes as follows:

“**Ülker** the Pleiades is one of the commonest of these names [early Turkish astronomical terms]. In one form or another (in Kazakh and Kirghiz as **ürker**) it survives in most modern languages, in some side by side with forms of the Arabic word *turayyā*. ... It seems probable that the word was originally a military term meaning ‘ambush’, and was then used metaphorically for the small group of stars which constitutes the Pleiades. ... The earliest trace that I have found of **ürker** is in *Sanglakh* 71 r. 19, where it is translated ‘the Pleiades’.”

Németh (1968: 5-6) regards *Ürker* as the original form and writes about its etymology as follows:

“Wenn man nämlich diese Stellen liest, kann man sich des Gedankens nicht erwehren, daß die Erklärung Bazins zu modifizieren ist: der Name *ürker*, *ülker* usw. ist nicht mit dem Zeitwort *üle-* ‘teilen’, sondern mit *ür-* ‘bla-

45 Its resemblance to a little dipper seems to be the reason why the following forms of *Ülker* have the meaning of ‘Great Bear’ or ‘Little Bear’:

Uyg. *Ürker* ‘Great Bear’ (UjRSb 121a, 131b)

*ÜRkey* ‘(dial.) Great Bear’ (UjRSb 121a)

*Üker* ‘Great Bear’ (UyXL 757b)

*Hüke* ‘(dial.) Great Bear’ (UjRSb 765c)

Bash. *Ölker* ‘(dial.) Little Bear’ (BTDH 257b)

Tuv. *Üger* ‘Little Bear’ (TvRSa 427a).

46 MEA 333b.

47 Mitton 2007: 271-272.

48 MEA 333b.

sen' zusammensetzen ('Luftloch', 'der Blasende, der Wehende': *ürker*). Ich glaube, daß sich mit dieser Etymologie auch die Endung des Wortes (-ker) erklären läßt. ... Streng genommen ist der Vokal e in *ürker* allerdings unregelmäßig. – Nicht unwesentlich ist die Bedeutung des Suffixes -*gur*. Es bildet keine nomina actoris im gewöhnlichen Sinne, wie z. B. das Suffix -*r*, sondern solche, in denen das Moment der Neigung, der Fähigkeit, der Gewohnheit steckt; *ürker* ist also nicht 'der Blasende', sondern 'der zu blasen pflegt.'”

This word is found in the form of *Üker* (兀格兒 *wù-gé-ér* in Pinyin, *u<sup>h</sup>-kja<sup>h</sup>-rr* in Early Mandarin) as the Uyghur word for Chin. 攢昂 *cuán-mǎo* 'Pleiades' in 高昌館譯書 *Gao-chang-guan-yi-shu*.<sup>49</sup>

In 五體清文鑑 *Wu-ti-qing-wen-jian*, the Uyghur word for 'the seventh star (Alkaid) of the Big Dipper' is given as *Üker yulduz* (WQ No. 68), whereas the Uyghur word for Chin. 勾陳 *gōu-chén* 'Curved Array'<sup>50</sup> is given as *Hürger yulduz* "Hürger star" (WQ No. 113).<sup>51</sup>

This word is used in most modern Turkic languages as follows.

#### 7.1.1 *Ülker*

*Ülker*: Trk. 'Pleiades' (TSa 1533a; TSb 2445a; TEDa 485b; TEDb 1207b; RÇTİS 413b; TRS 887b; ETD 408a)

*Ülker*: Tkm. 'Pleiades' (TmRSa 301a; TmRSb 671a; TmDS 683b)

CTat. 'Pleiades' (KtRSb 311a)

Kum. 'Pleiades' (KmRS 338a)

*Ülger*<sup>52</sup>: Alt. 'Pleiades' (ORS 172a)

49 See Ligeti 1966: 276.

50 According to the traditional Chinese astronomy, 勾陳 (句陳 or 鉤陳) *gōu-chén* represents the curved matters like a hook (鉤 'hook'), which is comprised of the following six stars: α UMi, δ UMi, ε UMi, ζ UMi, 2 UMi, and HIP 113116. The first four stars are in the constellation Ursa Minor, while the last two stars are in the constellation Cepheus. These stars belong to the Purple Forbidden enclosure (紫微垣 *Zi-wēi-yuán*). On the last page of this paper, one can see the Purple Forbidden enclosure map. The six stars of 勾陳 appears as 句陳六 (六 *liù* 'six'). I thank Dr. Hong-Jin YANG of the Korea Astronomy and Space Science Institute for his information about the Purple Forbidden enclosure map. He scanned it for me. This map is on the 470<sup>th</sup> page of the book entitled 諸家曆象集-天文類抄 *Jegaryeok-sangjip-Cheonmunryucho* compiled by the Korean History of Science Society (韓國科學史學會) in 1983. Both the original copy of 諸家曆象集 *Jegaryeoksangjip* and that of 天文類抄 *Cheonmunryucho* were compiled in 1445 and perhaps about the same time respectively by 李純之 *Yi Sun-Ji* (1406–1465) under the order of King Sejong the Great (世宗大王 1397–1450; r. 1418–1450), the fourth king of the Joseon Dynasty (1392–1910).

51 This word is given as ھورکریولدوز and its Manchu-transcribed form is *hur gar yulduz*. Perhaps it is to be read as *Hürker yulduz*.

52 There are Turkish dialectal forms *Ulger* and *Ülger* in DS XI 4034a and 4063a. The meaning of this forms is given as 'Sabahıldızı, Ülker'. *Sabah yıldızı* and *Ülker* mean 'morning star'

Khak. ‘Pleiades’ (XRSa 254b), ‘(Sagay dial.) Pleiades; (Kacha dial.) Orion’<sup>53</sup> (XRSb 750a; XRIS 166b)

*Ulk<sup>h</sup>er*: WYug. ‘Pleiades’ (XYHC 41b)

*Hülkär*: Uzb. ‘Pleiades’ (URS 663a; UED 176b; ÖTIL II 710c)

*Ölker*: Tat. ‘Pleiades’ (TtRS 739a; TTAS III 701b)

Bash. ‘Pleiades’ (BRSa 426a; BRSb 483b; BTH II 72a), ‘(dial.) Little Bear’ (BTDH 257b)

*Ilker*: Krch.-Blk.<sup>54</sup> ‘Pleiades’ (KBRS 301a)

This word is also used together with *yöndöz* ‘star’:

*Ölker yöndöz*: Bash. ‘Pleiades’ (BTH II 72a)

*Ölker yöndözö*: Bash. ‘Pleiades’ (BRSb 231a; BTH I 427a)

### 7.1.2 *Ürker*<sup>55</sup>

*Ürker*: Kaz. ‘Pleiades’ (KRSa 483b; KRSb 914b; KED 287b; QTS 698b)

Kkp. ‘Pleiades’ (KkRS 695a)

Uyg. ‘Great Bear’ (UjRSb 121a, 131b<sup>56</sup>)

*Ürkör*: Kyr. ‘Pleiades’ (KgRS 824a; ME II 505)

*Ü<sup>h</sup>er*: Tof. ‘Pleiades’ (TfRS 210a)

*Ürkey*: Uyg. ‘(dial.) Great Bear’ (UjRSb 121a)

### 7.1.3 *Üker*

*Üker*: Uyg. ‘Great Bear’ (UyXL 757b)

*Ü<sup>h</sup>er*: Tof. ‘Pleiades’ (TfRS 81a, 210a)

*Üger*: Tuv. ‘Pleiades’ (TvRSb 443a), ‘Little Bear’ (TvRSa 427a)

*Hüke*: Uyg. (dial.) ‘Great Bear’ (UjRSb 765c)

### 7.1.4 *Ürgel*

*Ürgel*: Yak. ‘Pleiades’ (JRS 457a)

---

and ‘Pleiades’ respectively.

53 Cf. Khak. (Kyzyl dial.) *Aday ülgeri* ‘Orion’ (XRSb 750a; XRIS 166b; “dog’s Pleiades”).

54 This word is found as *ülkörle* for Balkar in Pröhle 1915: 266. This form is analyzed as *ülkör* ‘Pleiades’ + *-le* ‘plural suffix’ (< *-ler*).

55 There is a Turkish dialectal form *Ürkeryıldızı* from Niğde in DS XI 4063a and 4069b. This word is analyzed as *Ürker* + *yıldız* ‘star’ + *-ı* ‘possessive suffix of the third person’. Thus, it has the literal meaning ‘the star of Ürker’. This word is given once as *Ürkeryıldızı* and once as *Ülkeryıldızı* in DS XI 4063a. *Ülkeryıldızı* is certainly an editorial error for *Ürkeryıldızı*. The meaning of this form is given as ‘Sabahyıldızı, Ülker’. *Sabah yıldızı* and *Ülker* mean ‘morning star’ and ‘Pleiades’ respectively.

56 This word is mentioned as a dialectal form.

## 7.2 Süreyya

This loanword from Ar. *turayyā* ‘Pleiades’ (DMWA 103a) is found in the following languages.

*Süreyya*: Trk. (TSa 1357a; TSb 2184b; TEDa 435b; TEDb 1041a; RÇTİS 355b; TRS 799a; ETD 408a)

Az. (ADIL III 598b; ADIL IV 172b, 424b)

CTat. (KtRSb 311a)

*Süräyyâ*: Uzb. (ÖTIL II 85c, 710c)

## 7.3 Pervin

The loanword from Per. *parwīn* ‘Pleiades; one of the twenty-eight stations of the moon; (met.) beast of burden’ (PED 246a) is found in the following languages.

*Pervin*: Trk. (TSb 1916a; TEDb 929a)

Az. (ADIL III 598b; ADIL IV 172b)

*Pārwin*: Uzb. (URS 319a)

## 7.4 Elek jıldiz

This word is analyzed as *elek* ‘sieve’<sup>57</sup> + *jıldiz* ‘star’. Thus, it has the literal meaning ‘sieve star’. This word is found in the following languages:

*Elek jıldiz*: Kyr. (ME II 505)

*Ilek yöldiz*: Tat. (TTAS I 382b)

*Ilek yöndözö*: Bash. (BRSb 231a; *yöndözö* < *yöndöz* ‘star’ + *-ö* ‘possessive suffix of the third person’)

*Ala šältär*: Chuv. (ČRSa 27a, 352a; ČRSb 29c, 402a)

## 7.5 Yeddigardaş

This word is analyzed as *yeddi* ‘seven’ + *ğardaş* ‘brother’. Thus, it has the literal meaning ‘seven brothers’. This word is found in Azerbaijani:

*Yeddigardaş* (ARS 190a; RAS II 471b; ADIL IV 568a)

*Yeddigardaş ulduzu* (ADIL III 598b; < *Yeddigardaş* + *ulduz* ‘star’ + *-u* ‘possessive suffix of the third person’)

See 5.1.2.1 and 7.6.

## 7.6 Yedikızkardeş

This word is analyzed as *yedi* ‘seven’ + *kız kardeş* ‘sister’ (< *kız* ‘girl; daughter; female-’ + *kardeş* ‘brother’). Thus, it has the literal meaning ‘seven sisters’. This word is found only in Turkish (TSb 2564b). It can be compared

57 “\***elgek** Conc. N. fr. **elge**-; ‘sieve’ (for solids, as opposed to **süzgü**: ‘strainer’ for liquids). ... S.i.a.m.l.g. in a wide variety of forms, usually **elek**, **élek**, **ilek**.” (ED 143a).

with Eng. *Seven Sisters*, Ger. *Sieben Schwestern*, and Russ. *Семь сестёр* which is the popular name for the Pleiades. This Turkish word is certainly a literal translation of these words.

See 5.1.2.1 and 7.5.

#### 7.7 *Ĵiyin ĵulduz*

This word is analyzed as *ĵiyin* ‘crowd’<sup>58</sup> + *ĵulduz* ‘star’. Thus, it has the literal meaning ‘crowd star’.<sup>59</sup> This word is found in Karachay-Balkar (KBRS 257a).

#### 7.8 *Köget ĵulduz*

This word is analyzed as *köget* ‘fruit’ + *ĵulduz* ‘star’.<sup>60</sup> Thus, it has the literal meaning ‘fruit’s star’. This word is found in Balkar (KBRS 257a).

#### 7.9 *Suanmo yultus*

This word is analyzed as *Suanmo* (< Chin. 攢昂 *cuán-mǎo*) + *yultus* ‘star’. It is a literal translation of Chin. 攢昂星 *cuán-mǎo-xīng* ‘Pleiades’. This word is used in Western Yugur (XYHC 275a, 332a).

#### 7.10 *Xoy čiltis*

This word is analyzed as *xoy* ‘sheep’<sup>61</sup> + *čiltis* ‘star’. Thus, it has the literal meaning ‘sheep’s star’. This word is found in Khakas (XRSa 326b; XRSb 1020b).

#### 7.11 *Kürgen*

This word is used in Khakas (Kacha dial.) with the meaning ‘January; Pleiades’ (XRSb 217a; XRS 56a<sup>62</sup>).

#### 7.12 *Kičig kürgen čiltis*

This word is analyzed as *kičig* ‘small’ + *kürgen* ‘Pleiades’ + *čiltis* ‘star’. Thus, it has the literal meaning ‘small star of *kürgen* (Pleiades)’. This word is found in Khakas (XRS 227b).

58 “**yig̃in** Intrans./Pass. N/A.S. fr. **yig̃-**; s.i.s.m.l. w. the usual phonetic changes.” (ED 904a)  
“**yig̃-** (?**yı̃:ğ̃-**) ‘to collect, assemble (Trans.)’. S.i.a.m.l.g., w. the usual phonetic changes, in this meaning, cf. **té:r-**, **ük-**.” (ED 897a). The correct reading of **ük-** is **üg-**.

59 “The Pleiades is an open cluster of stars in the constellation Taurus, clearly visible to the naked eye. It is thought to contain about 1000 stars within a sphere 30 light years across, and is 440 light years away.” (Mitton 2007: 271).

60 This word is found as *kögöt-dulduz* ‘a star which can be seen in the spring in the southern sky’ for Balkar in Pröhle 1915: 230.

61 “**ko:n̄** generically ‘sheep’, and specifically ‘ewe’.” (ED 631a).

62 This word is not mentioned as a Kacha dialectal form.

### 7.13 *Sōx čiltīs* “cold star”

This word is analyzed as *sōx* ‘cold’<sup>63</sup> + *čiltīs* ‘star’. Thus, it has the literal meaning ‘cold star’. This word is found in Khakas (XRIS 227b).

## 8. Names for ‘comet’

### 8.1 “star having a tail”

#### 8.1.1 *quyruqlu yulduz*

This compound is analyzed as *quyruq* ‘tail’<sup>64</sup> + *-lu* ‘with, having’ + *yulduz* ‘star’. Thus, it has the literal meaning ‘star having a tail’, which is descriptive of the flowing appearance of the tail of a bright comet.<sup>65</sup> It should have been named by the Turks themselves. The words with this literal meaning are also found in other languages, e.g. Ar. *najm dū danab* ‘comet’ (DMWA 945b; “star having a tail”), Per. *sitāra’i dum̄bāla-dār* ‘comet’ (PED 536b, 654b), *sitāra’i dum-dār* ‘comet’<sup>66</sup> (PED 535a, 654b; “star having a tail”), Mong. *segültü odu* (MED 600b), *segülteyi odu* (MED 683b) ‘comet’ (“star having a tail”), Sp. *estrella de rabo* ‘comet’ (“star having a tail”), Bulg. *onauāma zvezda* ‘comet’ (“star having a tail”), Kor. 꼬리별 (*kkoribyeol*) ‘comet’ (< 꼬리 (*kkori*) ‘tail’ + 별 (*byeol*) ‘star’; “star having a tail”).

The Uyghur word *quдруqlu yultuz* ‘comet’ is found in 434/17 of *Altun Yaruq* (= *Suvarṇabhāsa*).

In 五體清文鑑 *Wu-ti-qing-wen-jian*, the Uyghur word for ‘comet’ is given as *quyruqluq*<sup>67</sup> *yulduz* (WQ No. 122).

The Ottoman word *quyruqlu yıldız* ‘comet’ is given in VW II 892 and VW III 491. There is also the Altay-kizhi word *quyruqtū yıldīs* ‘comet’ in VW III 490.

This word is used in most modern Turkic languages.

*quyruqlu yulduz*: Kum. (KmRS 204b; RKmS 343a)

*quyruqlu yultuz*: Uyg. (UyXL 722a; UjRSa 250b; XUyL 352b)

63 “soğık N./A.S. fr. soğı:-; ‘cold’. S.i.a.m.l.g.” (ED 808a)

“soğı:- ‘to be cold’; s.i.s.m.l. w. phonetic changes (so:-, su:-, sovu-, etc.); in others displaced by der. f.s.” (ED 806a).

64 “**kuđruk** ‘the tail of an animal’; morphologically Pass. Dev. N. fr. \***kuđur-**, cf. **kuđurga:k**, **kuđurgu:n**; the origin of Mong. *kudurğa* ‘crupper’ (*Haenisch* 70, *Kow.* 919). S.i.a.m.l.g., usually as **kuyruk**.” (ED 604a).

65 See p. 365a of the v. 7 of the *Encyclopedia Americana* (1994).

66 This word is found as *sitarei dümdar* ‘comet’ in TEDb 1023a. But, it is now an obsolete word in Turkish.

67 This word is given as *quyruqluq*.

- quyruqli yulduz*: Uzb. (URS 628b; RUS 301b)  
*quyruqli yildiz*: CTat. (KtRSb 119a)  
*kuyruklu yildiz*: Gag. (GRMS 221b, 292b)  
*kuyruklu yulduz*: Trk. (TSa 941b; TSb 1549b; TEDb 692b; TRS 927b; ETD 100b)  
*kuyrukluyildiz*: Trk. (TEDa 314a; RÇTİS 244a; RTS 334a)  
*kuyruklu yolduz*: Kar. (h) (KRPS 344b)  
*qöyriqli yöldiz*: Tat. (TtRS 187b, 269a, 273b; TTAS II 129a)  
*qöyröqlö yöndöz*: Bash. (BRSa 227a; BR Sb 231a, 366a; BTH I 519b; RBS I 477a)  
*quyruqluq žultuz*: Uyg. (UjRSb 485a, 618c)  
*quyruqlu juldiz*: Krch.-Blk.<sup>68</sup> ‘comet’ (KBRS 257a), ‘comet, meteor’ (KBRS 421a)  
*quyriqtı žuldiz*: Kaz. (KRSb 317b; KED 278b; QTS 419a)  
*quyruqtı jildiz*: Kyr. (KgRS 280a, 439b; RKgS 292a)  
*xuryuxlu yildiz*: Ur. ‘comet, meteor’ (US 256a, 555b)  
*ğuyruğlu ulduz*: Az. (ARS 112a; RAS I 552a; ADIL III 228a)  
*quduruqtuy sildis*: Tuv. (TvRSb 262b; RTvSa 224a; RTvSb 218a)  
*kuturuktāx sulus*: Yak. (JRS 341b)  
*xuzuruxtıy čiltis*: Khak. (XRSb 858b; XRIS 227b)  
*xürellě šältār*: Chuv. (ČRSa 352a, 515b; ČRSb 402a, 571a)

### 8.1.2 *quyruq yulduz*

This compound is analyzed as *quyruq* ‘tail’ + *yulduz* ‘star’ and found in modern Uyghur (ETEDD 160, 254).

### 8.1.3 *quyruqtu čolmon*

This compound is analyzed as *quyruq* ‘tail’ + *-tu* ‘with, having’ + *čolmon* ‘star’. Thus, it also has the same literal meaning as *quyruqlu yulduz*. This word is found in Altay Turkic (RAIS 251b).

### 8.1.4 *dümli yulduz*

This compound is analyzed as *düm* ‘tail’ (< Per. *dum* ‘the tail; end, extremity; a rudder; dry dung used as fuel’ (PED 534b)) + *-li* ‘with, having’ + *yulduz* ‘star’. Thus, it also has the same literal meaning as *quyruqlu yulduz*. This word is found in Uzbek (URS 134a, 628b; ÖTIL I 238c, 393c).

68 This word is found as q<sup>h</sup>uyruqlu juldiz for Karachay in Pröhle 1909: 120.

## 8.2 *kometa*

This word comes from the Greek *komētēs*, meaning “hairy one,” a description that fits the bright comets noticed by the ancients.<sup>69</sup>

### 8.2.1 *kometa*

This word is used especially in the languages of the former Soviet Union as a loanword from Russ. *комета*.

Az. (RAS I 552a; ADIL II 726a; ADIL III 228a)

Tkm. (TmRSa 181b; TmRSb 405a; BRTmS I 465b; TmDS 389a)

Uzb. (URS 217a; UED 56a; ÖTIL I 393c; RUS 301b)

Krch.-Blk. (RKBS 231b)

Kum. (RKmS 343a)

Kaz. (KRSb 383a)

Kkp. (KkRS 328a; RKkS 351b)

Nog. (RNS 257b)

Tat. (TtRS 273b; TTAS II 141a)

Bash. (BRSSa 269b; BRSSb 285b; BTH I 519a; RBS I 477a)

Kyr. (KgRS 399b; RKgS 292a)

Alt. (RAIS 251b)

Khak. (XRSa 82b; XRSb 183b; RXS 322b)

Tuv. (TvRSa 233b; TvRSb 248a; RTvSa 224a; RTvSb 218a)

Yak. (RJS 233b)

Chuv. (ČRSa 170a; RČS 288a)

### 8.2.2 *komet*

This loanword from Fr. *comète* is found in Turkish (RTS 334a).

## 8.3 *saçlı yıldız*

This compound is analyzed as *saç* ‘hair of the head’<sup>70</sup> + *-li* ‘with, having’ + *yıldız* ‘star’. Thus, it has the literal meaning ‘a star having hair, a hairy star’ and reminds us of Eng. *comet* from the Greek *komētēs*, meaning “hairy one” and Lat. *stella crinita* ‘comet’ (“a star having (long) hair”). This word is found in Turkish:

*saçlı yıldız* (TEDb 969a<sup>71</sup>)

69 See p. 533a of the v. 27 of the New Encyclopædia Britannica, Macropædia (2007).

70 “**saç** ‘hair’, apparently only the hair of the human head. S.i.a.m.l.g. w. phonetic changes (s-/ş-/ç- ; -s/-ş/-ç); cf. **tü:**.” (ED 794a)

“**saçlığ** P.N./A. fr. **saç**; ‘hairy’ and the like. S.i.s.m.l. w. some phonetic changes.” (ED 797a).

71 This word is mentioned as archaic.



*saçlyıldız* (RTS 334a)

8.4 *učxan jılduz*

See 9.1.

8.5 *oçur yultus*

This word is analyzed as *oçur* ‘thief’<sup>72</sup> + *yultus* ‘star’. Thus, it has the literal meaning ‘thief star’ and is certainly a literal translation of Chin. 贼星 *zéi-xīng* ‘meteor’ (XHC 2400a; XHD 2042a; “thief star”), which is a popular name for 流星 *liú-xīng* ‘meteor’ (“flowing star”). This word is found in Western Yugur:

*oçur yultus* ‘comet’ (XYHC 34b)

*oçir yultus* ‘comet’ (XYHC 275a)

8.6 *yuldu-z tezmesi*

This word is analyzed as *yuldu-z* ‘star’ + *tez-* ‘to escape, to run (away)’<sup>73</sup> + *-me* ‘suffix making deverbal nouns’ + *-si* ‘possessive suffix of the third person’. Thus, it has the literal meaning ‘the running/escape of a star’. This word is found in Khalaj with the meaning of ‘comet, meteor’ (WCh 228b).

## 9. Names for ‘meteor/meteorite’

Meteor is the brief luminous trail observed as a particle of dust or a piece of rock from space enters Earth’s upper atmosphere. The popular name for a meteor is “shooting star” or “falling star”.<sup>74</sup> The entering object is called a meteoroid and, if any of it survives atmospheric passage, the remainder is called a meteorite.<sup>75</sup>

9.1 “flying star”

The Uyghur word *učar yultuz* ‘meteor’ in 434/22 and 554/20 of *Altun Yaruq* (= *Suvarṇaprabhāsa*) is analyzed as *uč-* ‘to fly’ + *-ar* ‘participle’ + *yultuz* ‘star’. Thus, it has the literal meaning ‘flying star’.

The words with this literal meaning are found in a few of the modern Turkic languages:<sup>76</sup>

72 “**oçri:** ‘thief’; the Instr. case **oçrim** meaning ‘furtively’ also occurs, esp. in SW, and has sometimes been regarded (falsely) as a separate word. S.i.a.m.l.g. with some phonetic variations.” (ED 90a).

73 “**tez-** ‘to run away, fly’, with some implication of ‘to succeed in running away, to escape’. Survives as **tez-/tes-** only(?) in some NE dialects and SW Tkm., elsewhere displaced by **kaç-**.” (ED 572a).

74 Mitton 2007: 223.

75 MEA 253a.

76 Cf. Trk. *yıldız ak-/kay-/uç-* ‘(for a star) to move rapidly in the sky’ (TSa 1631a; TSb 2592a), ‘(for a shooting star) to appear’ (TEDa 511b), ‘(for a shooting star) to fall’ (RÇTİS 439a),

*uĉâr yulduz*: Uzb. ‘meteor’ (URS 565b; RUS 241a; ÖTIL I 460c; ÖTIL II 286a; RUS 364a; < *uĉ-* ‘to fly’ + *-âr* ‘participle’ + *yulduz* ‘star’)

*uĉâr yulduzlâr*: Uzb. ‘meteors’ (RUS 524a; < *uĉâr yulduz* + *-lâr* ‘plural suffix’)

*öĉar yöldiz*: Tat. ‘meteorite’ (TtRS 187b; < *öĉ-* ‘to fly’ + *-ar* ‘participle’ + *yöldiz* ‘star’)

*uĉxan ĵulduz*: Krch.-Blk. ‘comet, meteor’ (KBRS 257a), ‘comet’ (RKBS 231b), ‘meteor’ (RKBS 271a; < *uĉ-* ‘to fly’ + *-xan* ‘participle’ + *ĵulduz* ‘star’)

*uĉayan yulduz*: Kum. ‘meteor’ (RKmS 403a; < *uĉ-* ‘to fly’ + *-ayan* ‘participle’ + *yulduz* ‘star’)

*uĉũĉu ĵildizdar*: Kyr. ‘meteors’ (RKgS 520b; < *uĉ-* ‘to fly’ + *-ũĉu* ‘participle’ + *ĵildiz* ‘star’ + *-dar* ‘plural suffix’)

*ildiy uĉqan ĵildiz*: Kyr. ‘meteor’ (RKgS 233a; < *ildiy* ‘down, downwards’ + *uĉ-* ‘to fly’ + *-qan* ‘participle’ + *ĵildiz* ‘star’; “star flying downwards”)

These words can be compared with Mong. *niskü odu* ‘shooting star’ (MED 600b) which means literally ‘flying star’.

## 9.2 “flowing star”

The words with this literal meaning are found in the following modern Turkic languages:

*akan yulduz*: Trk. ‘meteor’ (TSa 32b-33a; TSb 59b; TEDa 13b; TEDb 32b; < *ak-* ‘to flow’ + *-an* ‘participle’ + *yulduz* ‘star’)

*akanyulduz*: Trk. ‘meteor’ (RĈTİS 10b; ETD 491a; TRS 35c; RTS 270b, 586a)

*axan ulduz*: Az. ‘meteor’ (RAS I 433a; RAS II 376a; < *ax-* ‘to flow’ + *-an* ‘participle’ + *ulduz* ‘star’)

*aqqan ĵulduz*: Kkp. ‘meteor’<sup>77</sup> (RKkS 280b; < *aq-* ‘to flow’ + *-qan* ‘participle’ + *ĵulduz* ‘star’)

*akar yulduz*: Trk. ‘meteor’ (TEDb 32b; < *ak-* ‘to flow’ + *-ar* ‘participle’ + *yulduz* ‘star’)

*aqar yultuz*: Uyg. ‘meteor’ (UyXL 35b, 608b; XUyL 522b; < *aq-* ‘to flow’ + *-ar* ‘participle’ + *yultuz* ‘star’)

‘(for a star) to fall’ (TRS 927b; *ak-* ‘to flow’; *kay-* ‘to slip, to slide, to glide’; *uĉ-* ‘to fly’) *yulduz akması/kayması/uĉması* ‘flight of a shooting star, meteor’ (TEDb 1257b; *-ma* ‘suffix making deverbal nouns’; *-sı* ‘possessive suffix of the third person’).

77 **пáдающая звезда́** (метеорит) акқан жулдыз should be an editorial error for **пáдающая звезда́** (метеор) акқан жулдыз on this page. Because **пáдающая звезда́** means ‘shooting/falling star’, not ‘meteorite’.

*ayatuγiñ žuldizlar*: Kkp. ‘meteors’ (RKkS 626a; < *aq-* ‘to flow’ + *-atuγiñ* ‘participle’ + *žuldiz* ‘star’ + *-lar* ‘plural suffix’)

*aqpa žuldiz*: Kaz. ‘meteor’ (KRSb 39a, 317b; < *aq-* ‘to flow’ + *-pa* ‘suffix making deverbal nouns’ + *žuldiz* ‘star’)

These words can be compared with Chin. 流星 *liú-xīng* ‘meteor’ which means literally ‘flowing star’.

### 9.3 *meteor*

The term *meteor* is a loanword of the Medieval Latin *meteorum*, from the Greek *meteōron* ‘thing in the air’ (< *meteōros* ‘high in the air’ < *meta-* ‘beyond’ + *eōra* ‘suspension’).<sup>78</sup> It is used especially in the languages of the former Soviet Union as a loanword from Russ. *метеор*, whereas this word was borrowed into Turkish from Fr. *météore*.

Trk. ‘meteorological phenomenon; meteor’ (TSa 1015b), ‘meteorological phenomenon; meteorite’ (TSb 1666b), ‘meteor; (?) weather, atmospheric conditions’ (TEDa 337b), ‘meteor’ (TEDb 766a; ETD 339b; TRS 622a), ‘meteorological phenomenon’ (RÇTİS 263a)

Az. (ARS 241a; RAS II 75a; ADIL III 308b)

Tkm. (TmRSb 451a; BRTmS I 559a; TmDS 441b)

Uzb. (ÖTIL I 460c; RUS 241a, 364a)

Kum. (KmRS 229a; RKmS 403a)

Krch.-Blk. (KBRS 465b; RKBS 271a)

Kkp. (KkRS 458a; RKkS 425a)

Nog. (NRS 222a; RNS 301b)

Tat. (TtRS 368b; TTAS II 384a)

Bash. (BRSa 383b; BRSb 429a; RBS I 562b; BTH I 799b)

Kyr. (RKgS 354b)

Alt. (RAIS 294b)

Khak. (XRSa 106a; XRSb 242a; RXS 370b)

Tuv. (TvRSa 281a; TvRSb 294a; RTvSb 253b)

Yak. (JRS 238a; RJS 275b)

Chuv. (ČRSa 233b; ČRSb 239c; RČS 341a)

### 9.4 *meteorit*

This word meaning ‘meteorite’ is used especially in the languages of the former Soviet Union as a loanword from Russ. *метеорит*, whereas it was borrowed into Turkish from Fr. *météorite*.

<sup>78</sup> See p. 801c of the New International Webster’s Comprehensive Dictionary of the English Language — Deluxe Encyclopedic Edition — (2003).

- Trk. (TSa 1015b; TSb 1666b; TEDa 337b; TEDb 766a; TRS 622a; ETD 10a; RTS 398b)  
Az. (RAS II 75a; ADIL III 308b)  
Tkm. (TmRSb 451a; BRTmS I 559a; TmDS 441b)  
Uzb. (ÖTIL I 460c; RUS 364a)  
Uyg. (UyXL 243b; XUyL 1054b)  
Kum. (KmRS 229a; RKmS 403a)  
Krch.-Blk. (KBRS 465b; RKBS 271a)  
Kaz. (KRSb 599b; QTS 461b)  
Kkp. (KkRS 458a; RKkS 425a)  
Nog. (NRS 222a; RNS 301b)  
Tat. (TtRS 368b; TTAS II 384a)  
Bash. (BRSa 383b; BRSb 429a; RBS I 562b; BTH I 799b)  
Kyr. (RKgS 354b)  
Alt. (RAIS 294b)  
Khak. (XRSa 106a; XRSb 242a; RXS 370b)  
Tuv. (TvRSa 281a; TvRSb 294a; RTvSa 268b; RTvSb 253b)  
Yak. (JRS 238a; RJS 275b)  
Chuv. (ČRSa 234a; ČRSb 239c; RČS 341a)

### 9.5 *atilyan yöldiz*

This word is analyzed as *atıl-* ‘to be throw, shot’<sup>79</sup> (< *at-* ‘to throw, shoot’ + *-i-* ‘connective vowel’ + *-l-* ‘suffix making passive verbs’) + *-yan* ‘participle’ + *yöldiz* ‘star’. Thus, it has the literal meaning ‘thrown star’. This word is found in the following two languages in the Volga area:

*atilyan yöldiz*: Tat. ‘meteor’ (TTAS II 384a)

*atilyan yöndöz*: Bash. ‘meteor’ (RBS I 562b)

### 9.6 *meteor taši*

This word is analyzed as *meteor* ‘meteor’ + *taš* ‘stone’ + *-i* ‘possessive suffix of the third person’. Thus, it has the literal meaning ‘meteoric stone’.<sup>80</sup> This word is found in the following two languages:

*meteor taši*: Tat. ‘meteorite’ (TtRS 368b)

79 “**atıl-** Pass. F. of **at-**; ‘to be thrown, shot’, etc. S.i.a.m.l.g.; with a wide range of meanings in Osm.” (ED 56a).

“**at-** basically ‘to thrown, to shoot’, with a very wide range of extended and metaph. meanings.” (ED 36a).

80 Cf. Russ. *метеорный камень* ‘meteorite’ (“meteoric stone”).

Trk. *meteor taşı*: ‘meteorite’ (TSa 1015b; TSb 1666b; TEDa 337b; TEDb 766a)

*meteortaşı*: Trk. ‘meteorite’ (RÇTİS 263a; TRS 622a; RTS 398b)

### 9.7 *čügürgen sildis*

The Tuvan word *čügürgen sildis* ‘meteor’ (RTvSb 253b) is analyzed as *čügür-* ‘to run’<sup>81</sup> + *-gen* ‘participle’ + *sildis* ‘star’. Thus, it has the literal meaning ‘running star’.

### 9.8 *kayan yıldız*

The Turkish word *kayan yıldız* ‘meteor’ (TEDa 280b; ETD 188a) is analyzed as *kay-* ‘to slip, to slide, to glide’ + *-an* ‘participle’ + *yıldız* ‘star’. Thus, it has the literal meaning ‘slipping/sliding/gliding star’.

### 9.9 *süynyän yildiz*

The Turkmen word *süynyän yildiz* ‘meteor’ (BRTmS I 382a; TmDS 441b) is analyzed as *süyn-* ‘to stretch out’ (< *süyn-* ‘to draw out, to stretch’ + *-n-* ‘suffix making reflexive/passive verbs’) + *-yän* ‘participle’ + *yildiz* ‘star’. Thus, it has the literal meaning ‘stretched star’.

### 9.10 *sindīs*

This word for ‘meteor’ is found in Yakut:

*sindīs* (RJS 275b)

*sindīs sulus* (JRS 359b; *sulus* ‘star’)

### 9.11 *liušin*

The Salar word *liušin* ‘meteor’ (SHHSC 54a, 177a) was borrowed from Chin. 流星 *liú-xīng* ‘meteor’ (“flowing star”).

See **9.1**.

### 9.12 *şahap*

The Turkish word *şahap* means ‘meteor’ (TSa 1366a; TSb 2196a; TEDa 438a; TEDb 1045a; RÇTİS 358a; ETD 339b, 491a; RTS 586a), ‘meteor; meteorit’ (TRS 802b). It was borrowed from Ar. *şihāb* ‘flame, blaze, fire; shooting star, luminous meteor; star’ (DMWA 488b).

### 9.13 *yuldu-z tezmesi*

81 “**yügür-** ‘to run fast’, of a man, horse, etc., and metaph. of other things.” (ED 914b).

See 8.6.

#### 9.14 *ağma*

This Turkish word is analyzed as *ağ-* ‘to rise in the air’ + *-ma* ‘suffix making deverbal nouns’. It means ‘meteor’ (TSa 28a; TSb 50b; RÇTİS 9b; RTS 586a; DS I 102a), ‘(shooting) star’ (TEDa 11b), ‘ascension, rise; star; shooting star’ (TEDb 23b), ‘ascension, rise; star; shooting star, meteorite’ (TRS 32b).

#### 9.15 *ağan*

The Turkish word *ağan* ‘meteor’ (RÇTİS 7a; RTS 270b, 586a) is analyzed as *ağ-* ‘to rise in the air’ + *-an* ‘participle’. Thus, it has the literal meaning ‘(something) rising in the air’.

#### 9.16 *gök taşı*

This Turkish word is analyzed as *gök* ‘sky’ + *taş* ‘stone’ + *-ı* ‘possessive suffix of the third person’. Thus, it has the literal meaning ‘sky’s stone’, i.e. ‘stone from the sky’. It is found as follows:

*gök taşı* ‘meteorite’ (TSa 558b; TSb 958b), ‘meteor, meteorite’ (TEDb 406b)

*göktaşı* ‘meteor, meteorite’ (TEDa 196b; RÇTİS 143a; RTS 398b), ‘meteorite’ (TRS 344a; ETD 10a, 339b)

#### 9.17 *hava taşı*

This Turkish word is analyzed as *hava* ‘air; atmosphere’ (< Ar. *hawā* ‘air; atmosphere; wind, draft; weather, climate’ (DMWA 1040ab)) + *taş* ‘stone’ + *-ı* ‘possessive suffix of the third person’. Thus, it has the literal meaning ‘atmosphere’s stone’, i.e. ‘stone from the atmosphere’. It is found as follows:

*hava taşı* ‘meteorite’ (TSb 1065b), ‘aerolite’ (TEDb 463b)

*havataşı* ‘aerolite’ (RÇTİS 161a), ‘meteorite, bolide’ (TEDa 218a), ‘(stone) meteorite, aerolite’ (TRS 394a), ‘bolide’ (ETD 57a)

#### 9.18 *şimşek taşı*

This Turkish word is analyzed as *şimşek* ‘lightning flash’ + *taş* ‘stone’ + *-ı* ‘possessive suffix of the third person’. Thus, it has the literal meaning ‘lightning flash’s stone’, i.e. ‘stone flashing like a lightning’. It is found as follows:

*şimşek taşı* ‘meteorite’ (TSb 2226a; TEDb 1063a), ‘meteor’ (TRS 811a)

*şimşektaşı* ‘meteorite’ (TEDa 443b; RÇTİS 364a)

#### 9.19 *uzay taşı*

The Turkish word *uzay taşı* ‘meteorite’ (TSb 2436b) is analyzed *uzay* ‘space’ + *taş* ‘stone’ + *-ı* ‘possessive suffix of the third person’. Thus, it has the literal meaning ‘space’s stone’, i.e. ‘stone from the space’.

### 9.20 *sıldis toylančizi*

The Tuvan word *sıldis toylančizi* ‘meteorite’ (RTvSa 268b) is analyzed *sıldis* ‘star’ + *toylančī* ‘crumbs; small fragments’ (< *toyla-* ‘to crumble’ + *-nčī* ‘suffix making deverbal nouns’) + *-zi* ‘possessive suffix of the third person’. Thus, it has the literal meaning ‘crumbs/small fragments of a star’.

### III. Conclusion

As the result of this research, it was possible for us to find the following points:

1. As is well known, *yultuz* is used as the word for ‘star’ practically in all of the modern Turkic languages. As Clauson (1964) writes, this word mean both ‘fixed star’ and ‘planet’ (other than the sun and moon).

2. Various forms with the literal meaning of ‘full moon’ are used as the word for ‘full moon’ practically in all of the modern Turkic languages.

3. *Čolpan* is most widely used as the word for ‘Venus’ in modern Turkic languages. This word means also ‘star’ in several languages. It can be accepted as a genuine Turkic one or a loanword from an unknown old language.

4. *Čoban yıldızı* “the shepherd’s star” is also used as the word for ‘Venus’ in Turkey and its neighboring areas. Although, *Čoban* is regarded as the secondary form of *Čolpan* owing to a false etymology, it can be compared with Fr. *étoile du berger* ‘Venus’ (“the shepherd’s star”).

5. *Taň yıldızı* “the star of dawn/daybreak”, *Taň čolpanı* “Venus/the star of dawn/daybreak”, *Zühre*, and *Venera* are also widely used as the word for ‘Venus’.

6. *Kervankıran* “breaker/killer/destroyer of a caravan” is found only in the languages of Oghuz group as the word for ‘Venus’. But, this word does not mean ‘Venus’, but a different star in Turkmen.

7. *Temirqazıq* “iron stake” ist most widely used as the word for ‘the Pole Star’ in modern Turkic languages.

8. *Altın qazıq* “gold stake” and *Qutup yultuzı* “pole star” are also used as the word for ‘the Pole Star’ in several languages.

9. Many words comprised of the number ‘seven’ and a noun/suffix mean ‘the Great Bear’ in the Turkic languages. These words must have meant originally the seven bright stars of the Great Bear, i.e. the Big Dipper.

10. The words with the literal meaning ‘big bear’ are also widely used as the word for ‘the Great Bear’.

11. Various forms comprised of a word meaning ‘small’ and a word meaning ‘the Great Bear; the Big Dipper’ are used as the word for ‘the Little Bear’.

12. The forms with the literal meaning ‘small bear’ are found in a few languages as the word for ‘the Little Bear’.

13. *Ülker* is used as the word for ‘the Pleiades’ in most modern Turkic languages.

14. *Süreyya*, *Pervin*, and *Ilek yıldız* are also used as the word for ‘the Pleiades’ in a few languages.

15. *Quyruqlu yulduz* ‘star having a tail’ is used as the word for ‘comet’ in most of modern Turkic languages.

16. *Kometa* is also widely used as the word for ‘comet’ in modern Turkic languages.

17. *Meteor* is widely used as the word for ‘meteor’ in modern Turkic languages.

18. *Meteorit* is widely used as the word for ‘meteorite’ in modern Turkic languages.

19. Turkish has many words for ‘meteor’ and ‘meteorite’.

20. Not surprisingly, the languages of the same group or in adjacent areas have common words:

Trk. *Çoban yıldızı*, CTat. *Čoban yıldızı*, Ur. *Čoban yıldız(i)*, Az. *Čoban-ulduzu* ‘Venus’ (“the shepherd’s star”)

Trk. *Sabah yıldızı*, Gag. *Sabaa yıldızı* ‘Venus’ (“the star of morning”)

Tat. *Ėngĕr yıldızı*, Bash. *Ėñĕr yōndōzō* ‘Venus’ (“the star of dusk”)

Khak. *Īr solbani*, Chul. *Iñır šolbōnu*, *Iñer šolbōnu* ‘Venus’ (“the star of evening”)

Trk. *Kervankıran*, *Kervankıran yıldızı*, Az. *Karvangıran*, Gag. *Kervankıran*

(*yıldızı*) ‘Venus’, Tkm. *Kerwengıran* ‘Jupiter’, ‘a star which rises one or two hours earlier than the morning star’

Sal. *Yārux yultus* ‘the Pole Star’, Uyg. *Yoruq yulduz* ‘the Pole Star’ (“bright star”)

Tkm. *Ömrüzāya*, *Ömrüzāya yıldızı* ‘Venus’, Kaz. *Ömirzaya* ‘a star which appears and falls towards dawn’, Kkp. *Ömiri zaya žuldiz* ‘Sirius’ (“its life is spoiled”; rather a Persian *izāfa* عمرضائع *umr-i zā i* ‘or عمرضائع *umr-i zāyi* ‘useless life’ (?))

Kyr., Alt. *Altın qazıq*, Uzb. *Áltınqáziq*, Uyg. *Altun qéziq* ‘the Pole Star’ (“gold stake”)



- Shor. *Qoşqar*, Khak. *Xosxar* ‘the Pole Star’  
 Khak. *Čiti čiltis*, (Kyzyl dial.) *Šeti šiltis*, Tuv. *Čedi-sildis* ‘the Great Bear’ (“seven stars”)  
 Uzb. *Yetti qaraqçi*, Kyr. *Jeti qaraqçi*, Kaz., Kkp. *Žeti qaraqši* ‘the Great Bear’ (“seven robbers”)  
 Alt. *D’eti-qān*, Tuv. *Čedi-xān*, Tof. *Č’edi-qan* ‘the Great Bear’ (“seven khans”)  
 Uzb. *Kičik yetti qaraqçi*, Kkp. *Kiši žeti qaraqši* ‘the Little Bear’ (“small seven robbers”)  
 Kaz., Kkp. *Ūrker*, Kyr. *Ūrkör* ‘the Pleiades’, Uyg. *Ūrker* ‘the Great Bear’  
 Trk., Az., CTat. *Süreyya*, Uzb. *Süräyyä* ‘the Pleiades’  
 Trk., Az. *Pervin*, Uzb. *Pärwin* ‘the Pleiades’  
 Tat. *Ilek yöldiz*, Bash. *Ilek yöndözö*, Chuv. *Ala šältär* ‘the Pleiades’ (“sieve star”)  
 Trk. *akan yıldız*, Az. *axan ulduz* ‘meteor’ (“flowing star”)  
 Tat. *atilyan yöldiz*, Bash. *atilyan yöndöz* ‘meteor’ (“thrown star”)

21. Some star names are borrowed from non-Turkic languages:

- Trk. *bedir*, Az. *bedir*, *bedr* ‘full moon’  
 Trk. *Zühre*, Az. *Zöhre*, Tat., Bash. *Zöhre*, ... ‘Venus’  
 Az., Tkm., Uzb. *Venera*, Uyg. *Wenera*, Trk. *Venüs* ‘Venus’  
 Tkm. *Ömrüzāya*, *Ömrüzāya yıldızı* ‘Venus’, Kaz. *Ömirzaya* ‘a star which appears and falls towards dawn’, Kkp. *Ömiri zaya žuldiz* ‘Sirius’<sup>82</sup>  
 Trk. *Dübbükber*, Az. *Dübb-i ekber* ‘the Great Bear’  
 Trk. *Dübbüasgar*, Az. *Dübb-i esyer* ‘the Little Bear’  
 Trk., Az., CTat. *Süreyya*, Uzb. *Süräyyä* ‘the Pleiades’  
 Trk., Az. *Pervin*, Uzb. *Pärwin* ‘the Pleiades’  
 Az., Tkm., Uzb., ... *kometa*, Trk. *komet* ‘comet’  
 Trk., Az., Tkm., ... *meteor* ‘meteor’  
 Trk., Az., Tkm., ... *meteorit* ‘meteorite’

22. Some star names are apparently translated from non-Turkic languages:

- Trk. *Kervankıran*, *Kervankıran yıldızı*, Az. *Karvangıran*, Gag. *Kervankıran* (*yıldızı*) ‘Venus’, Tkm. *Kerwengıran* ‘Jupiter’, ‘a star which rises one or two hours earlier than the morning star’

82 Of course, *yıldızı* and *žuldiz* are Turkic words.

Trk. *Kutup yıldızı*, Az. *Ġütb ulduzu*, Uzb. *Qutb yulduzi*, Uyg. *Qutup yultuzi*, *Qutup žultuzi*, Tat. *Qötiþ yöldizi*, Kyr. *Qut žıldız* ‘the Pole Star’

Tuv. *Polyar sildizi*, *Polyar šolbanı* ‘the Pole Star’

Trk. (dial.) *Yedikardeş*, *Yedikardaş*, *Yedigardaş*, Uzb. *Yetti aýayni*, Khal. *Y’ēti lālalar* ‘the Great Bear’

Tuv. (Uriankhai dial.) *Čedi burxan* ‘the Great Bear’

Trk. *Büyük ayı*, Gag. *Būk ayı*, Az. *Böyük ayı bürjü*, Ur. *Büyük ayuv*, Uz. *Kättä äyiq*, Kyr. *Čoñ ayū*, Uyg. *Čoñ äyiq yultuzlar türkümi*, Alt. (Altay-kizhi dial.) *D’ān ayu*, Alt. (Chalkandu dial.) *Ñān ayu* ‘the Great Bear’

Trk. *Küçük ayı*, Az. *Kiçik ayı bürjü*, Uzb. *Kiçik äyiq*, Uyg. *Kiçik äyiq yultuzlar türkümi* ‘the Little Bear’

Uyg. *Ĵinaza žultuz* ‘the Little Bear’

Uyg. *Üč yultuz* ‘Orion’s Belt [three bright stars across Orion]’

WYug. *Suanmo yultus* ‘the Pleiades’

WYug. *oþur yultus*, *oþir yultus* ‘comet’

23. The meaning of *yaruq yulduzi* in an ode to spring on p. 60 of *Dīwān Luḡāt at-Turk* is given as ‘Lichtstern’ in Németh 1968: 3, ‘the shining (*al-tāqib*) star’ in ED 963a, and ‘Venus’ <: ‘the star of glamour [correctly, gleam]’> in Gyarmati 2003: 81. However, *yaruq* is not a noun but an adjective here, because this word is analyzed as *yaruq* ‘bright’ + *yulduz* ‘-’ + *-i* ‘possessive suffix of the third person’ and this possessive suffix belongs certainly to the spring. Therefore, the meaning of this word should be ‘its bright star’. Moreover, it is not certain that this word means ‘Venus’.

### Abbreviations and Bibliography

Alt.	Altay Turkic	Krch.-Blk.	Karachay-Balkar
Ar.	Arabic	Khal.	Khalaj
Az.	Azerbaijani	Kum.	Kumyk
Bash.	Bashkir	Kyr.	Kyrgyz
Bulg.	Bulgarian	Lat.	Latin
Chin.	Chinese	Mong.	Mongolian
Chul.	Chulym Turkic	Nog.	Nogay
Chul. (L)	Lower Chulym dialect	Per.	Persian
Chul. (M)	Middle Chulym dialect	Russ.	Russian
Chuv.	Chuvash	Sal.	Salar
CTat.	Crimean Tatar	Shor.	Shor

Dol.	Dolgan	Skr.	Sanskrit
Eng.	English	Sp.	Spanish
Fr.	French	Tat.	Tatar
Gag.	Gagauz	Tkm.	Turkmen
Ger.	German	Tof.	Tofa
Gr.	Greek	Trk.	Turkish
Kar. (c)	Karaim (Crimean dial.)	Tuv.	Tuvan
Kar. (h)	Karaim (Halych-Lutsk dial.)	Ur.	Urum
Kar. (t)	Karaim (Trakai dial.)	Uyg.	Modern Uyghur
Kaz.	Kazakh	Uzb.	Uzbek
Khak.	Khakas	WYug.	Western Yugur
Kkp.	Karakalpak	Yak.	Yakut
Kor.	Korean		

ADIL Orujov, Eliheyder (ed.), *Azerbayjan dilinin izahlı lüyeti I-IV*, Bakı 2006.

ARS Azizbekov, X. A., *Azerbajdžansko-russkij slovar'*, Baku 1985.

BRSa Axmerov, K. Z. et al., *Baškirsko-russkij slovar'*, Moskva 1958.

BRSb Uraksin, Z. G. (ed.) 1996, *Baškirsko-russkij slovar'*, Moskva 1996.

BRTmS Čaryjarov, B. & S. Altajev (eds.), *Bol'šoj russko-turkmenskij slovar'*, I, Moskva 1986; II, Moskva 1987.

BTDH Dilmöxemetov, M. I., *Bašqört tēlēnēj dialektari hüzlēgē*, Őfö 2002.

BTH Ağıšev, I. M. et al., *Bašqört tēlēnēj hüzlēgē I-II*, Moskva 1993.

CPED Aryanpur-Kashani, Abbas & Manoochehr Aryanpur-Kashani, *The Concise Persian-English Dictionary*, Tehran 1983<sup>3</sup>.

ČRSa Sirotkin, M. Ja. (ed.), *Čuvaško-russkij slovar'*, Moskva 1961.

ČRSb Skvorcov, M. I. (ed.), *Čuvaško-russkij slovar'*, Moskva 1985.

DLT Maḥmūd al-Kāšyarī, *Compendium of the Turkic Dialects (Dīwān Luḡāt at-Turk)*, edited and translated with Introduction and Indices by Robert Dankoff in collaboration with James Kelly, Cambridge, Mass. 1982-1985.

DMWA Wehr, Hans, *A Dictionary of Modern Written Arabic*, edited by J. Milton Cowan, Beirut & London 1980<sup>3</sup>.

DS *Türkiye'de Halk Ağzından Derleme Sözlüğü I-XII*, Türk Dil Kurumu Yayınları: 211, Ankara 1963-1982.

DW Stachowski, Marek, *Dolganischer Wortschatz*, Kraków 1993.

- DWS Stachowski, Marek, *Dolganischer Wortschatz, Supplementband*, Kraków 1998.
- EAA Murdin, Paul (ed.), *Encyclopedia of Astronomy and Astrophysics 1-4*, Bristol & Philadelphia; London, New York & Tokyo 2001.
- ED Clouston, Sir Gerard, *An Etymological Dictionary of Pre-Thirteenth-Century Turkish*, Oxford 1972.
- ETD İz, Fahir & H. C. Hony, *The Oxford English-Turkish Dictionary*, Oxford 1978<sup>2</sup>.
- ETEDD Jarring, Gunnar, *An Eastern Turki-English Dialect Dictionary*, Lund 1964.
- GRMS Baskakov, N. A. (ed.), *Gagauzsko-russko-moldavskij slovar'*, Moskva 1973.
- JRS Slepcev, P. A. (ed.), *Jakutsko-russkij slovar'*, Moskva 1972.
- JŽUJ Malov, S. Je., *Jazyk želtyx ujugurov (slovar' i grammatika)*, Alma-Ata 1957.
- KBRS Tenišev, E. R. & X. I. Sujunčev (eds.), *Karačajevo-balkarsko-russkij slovar'*, Moskva 1989.
- KED Shnitnikov, Boris N., *Kazakh-English Dictionary*, Indiana University Publications, Uralic and Altaic Series, Vol. 28, London & The Hague & Paris 1960.
- KgRS Judaxin, K. K., *Kirgizsko-russkij slovar'*, Moskva 1965.
- KkRS Baskakov, N. A. (ed.), *Karakalpaksko-russkij slovar'*, Moskva 1958.
- KmRS Bammatov, Z. Z. (ed.), *Kumyksko-russkij slovar'*, Moskva 1969.
- KRPS Baskakov, N. A., A. Zajączkowski & S. M. Szapszał (eds.), *Karaimsko-russko-pol'skij slovar'*, Moskva 1974.
- KRSa Maxmudov, X. & G. Musabajev, *Kazaxsko-russkij slovar'*, Moskva 1954.
- KRSb Syzdykova, R. G. & K. Š. Xusain (eds.), *Kazaxsko-russkij slovar'*, Almaty 2001.
- KtRSa Asanov, Š. A., A. N. Garkavec & S. M. Useinov, *Krymskotatarsko-russkij slovar'*, Kijev 1988.
- KtRSb Useinov, S. M., *Krymskotatarsko-russkij slovar'*, Gernopol' 1994.
- KtRUS Garkavec, A. N. & S. M. Useinov, *Krymskotatarsko-russko-ukrain-skij slovar'*, tom I, Simferopol' 2002.
- LČTJ Birjukovič, R. M., *Leksika čulymsko-tjurkskogo jazyka*, Saratov 1984.

- LOQ Bang, W. & G. R. Rachmati, *Die Legende von Oghuz Qaghan*, Sonderausgabe aus den Sitzungsberichten der preussischen Akademie der Wissenschaften Phil.-Hist. Klasse. 1932. XXV, Berlin 1932.
- ME Karıpkulov, A. (ed.), *Manas enciklopediyası*, I-II, Biškek 1995.
- MEA Parker, Sybil P. & Pasachoff, Jay M. (eds.), *McGraw-Hill Encyclopedia of Astronomy*, New York, ... 1993<sup>2</sup>.
- MED Lessing, Ferdinand D. (ed.), *Mongolian-English Dictionary*, corrected re-printing with a new Supplement, Bloomington 1973. (1st edition in 1960)
- NPED Haım, S., *New Persian-English Dictionary*, Tehran 1991.
- NRS Baskakov, N. A. (ed.), *Nogajsko-russkij slovar'*, Moskva 1963.
- ORS Baskakov, N. A. & T. M. Toščakova, *Ojrotsko-russkij slovar'*, Moskva 1947.
- ÖTIL Ma'rufov, Z. M., *Özbék tiliniñ izáhli luyati I-II*, Moskva 1981.
- PDW Junker, Heinrich F. J. & Bozorg Alavi, *Persisch-deutsches Wörterbuch*, Leipzig 1965.
- PED Steingass, F., *A Comprehensive Persian-English Dictionary*, Beirut 1975. (1st edition in 1892)
- PRS Miller, B. V., *Persidsko-russkij slovar'*, Moskva 1960<sup>3</sup>.
- QTS Žanuzaqov, Telyoža (ed.), *Qazaq tiliniñ sözdigi*, Almatı 1999.
- RAIS Baskakov, N. A. (ed.), *Russko-altajskij slovar'*, Moskva 1964.
- RAS Orudžov, A. A. (ed.), *Russko-azerbajdžanskij slovar' I-III*, Baku 1991<sup>5</sup>.
- RBS Uraksin, Z. G. (ed.), *Russko-baškirkij slovar' I-II*, Ufa 2005.
- RČS Andrejev, I. A. & N. P. Petrov (eds.), *Russko-čuvaškij slovar'*, Moskva 1971.
- RÇTİS Avery, C. Robert *et al.*, *Redhouse Çağdaş Türkçe-İngilizce Sözlüğü*, İstanbul 1983.
- RJS Afanas'ev, P. S. & L. N. Xaritonov (eds.), *Russko-jakutskij slovar'*, Moskva 1968.
- RKBS Sujunčev, X. I. & I. X. Urusbijev (eds.), *Russko-karačajevo-balkarskij slovar'*, Moskva 1965.
- RKgS Judaxin, K. K. (ed.), *Russko-kirgizskij slovar'*, Moskva 1957.
- RKkS Baskakov, N. A. (ed.), *Russko-karakalpakskij slovar'*, Moskva 1967.

- RKmS Bammatov, Z. Z. (ed.), *Russko-kumykskij slovar'*, Moskva 1960.
- RKuS D'ajym, N. A. (ed.), *Russko-kumandinskij slovar'*, Bijsk 2006.
- RNS Baskakov, N. A. (ed.), *Russko-nogajskij slovar'*, Moskva 1956.
- RTS Mustafajev, E. M.-E. & V. G. Ščerbinin (eds.), *Russko-tureckij slovar'*, Moskva 1972.
- RTvSa Pal'mbax, A. A. (ed.), *Russko-tuvinskij slovar'*, Moskva 1953.
- RTvSb Monguš, D. A. (ed.), *Russko-tuvinskij slovar'*, Moskva 1980.
- RUS Abduraxmanov, R. (ed.), *Russko-uzbekskij slovar'*, Moskva 1954.
- RXS Čankov, D. I. (ed.), *Russko-xakasskij slovar'*, Moskva 1961.
- SD Li, Yong-Sōng, *A Study of Dolgan*, Seoul 2011.
- SDRRD Aksenova, Je. Je., N. P. Bel'tjukova, & T. M. Koševerova, *Slovar' dolgansko-russkij i russko-dolganskij*, Sankt-Peterburg 1992.
- SHHSC Lin, Lián-yún, *Sālā-Hàn Hàn-Sālā Cihui*, Chéngdū 1992. [林莲云, 撒拉汉汉撒拉词汇, 成都 1992.]
- SSJ Tenišev, E. R., *Stroj salarskogo jazyka*, Moskva 1976.
- SSJJ Tenišev, E. R., *Stroj saryg-jugurskogo jazyka*, Moskva 1976.
- ŠRRŠS Kurpeško-Tannagaševa, N. N. & F. Ja. Apon'kin, *Šorsko-russkij i russko-šorskij slovar'*, Kemerovo 1993.
- TEDa Hony, H. C. & Fahir İz, *The Oxford Turkish-English Dictionary*, Oxford 1985<sup>9</sup>.
- TEDb Alkim, U. Bahadır *et al.* (eds.), *New Redhouse English-Turkish Dictionary*, İstanbul 1988<sup>10</sup>.
- TfRS Rassadin, V. I., *Tofalarsko-russkij slovar'*. *Russko-tofalarskij slovar'*, Irkutsk 1994.
- TmDS Xamzajev, M. Ya. (ed.), *Türkmen diliniñ sözlügi*, Aşgabat 1962.
- TmRSa Baylijev, X. & B. Karijev, *Türkmençe-rusça sözlük*, Aşgabat 1940.
- TmRSb Baskakov, N. A., B. A. Karijev & M. Ja. Xamzajev (eds.), *Türkmen-sko-russkij slovar'*, Moskva 1968.
- TRS Mustafajev, E. M.-E. & L. N. Starostov (eds.), *Turecko-russkij slovar'*, Moskva 1977.
- TSa Eren, Hasan *et al.*, *Türkçe Sözlük 1-2*, Türk Dil Kurumu Yayınları: 549, Ankara 1988<sup>8</sup>.
- TSb Akalın, Şükrü Halük *et al.*, *Türkçe Sözlük*, Türk Dil Kurumu Yayınları: 549, Ankara 2011<sup>11</sup>.
- TT VII Rachmati, G. R., *Türkische Turfan-Texte VII*, Berlin 1936.

- TTAS Maxmutova, L. T. *et al.* (eds.), *Tatar tēlěņej aŋlatmalı sızlěğě*, I, Kazan 1977; II, Kazan 1979; III Kazan 1981.
- TtRS Abdrazakov, K. S. *et al.*, *Tatarsko-russkij slovar'*, Moskva 1966.
- TvRSa Pal'mbax, A. A. (ed.), *Tuvinsko-russkij slovar'*, Moskva 1955.
- TvRSb Tenišev, E. R. (ed.), *Tuvinsko-russkij slovar'*, Moskva 1968.
- UED Waterson, Natalie, *Uzbek-English Dictionary*, Oxford 1980.
- UjRSa Kibirov, Š. & Ju. Cunvazo, *Ujgursko-russkij slovar'*, Alma-Ata 1961.
- UjRSb Nadžip, E. N., *Ujgursko-russkij slovar'*, Moskva 1968.
- URS Borovkov, A. K. (ed.), *Uzbeksko-russkij slovar'*, Moskva 1959.
- US Garkavec', Oleksandr, *Urums'kyj slovník*, Alma-Ata 2000.
- UyXL Šinjian dašüe Xenzu tili fakultěti, *Uyğurçe-Xenzuče Luğet*, Ürümči 1982.
- VW Radloff, Wilhelm, *Versuch eines Wörterbuches der Türk-Dialecte I-IV*, St. Petersburg 1893-1911.
- WCh Doerfer, Gerhard & Semih Tezcan, *Wörterbuch des Chaladsch (Dialekt von Charrab)*, Bibliotheca Orientalis Hungarica XXVI, Budapest 1980.
- WQ *Wu-ti-qing-wen-jian*, vol. 1, in the collection of the Palace Museum, Beijing 1957. [五體清文鑑, 上冊, 故宮博物院藏, 北京 1957.]
- XHC *The Contemporary Chinese Dictionary [Chinese-English Edition]*, compiled by Dictionary Department, Institute of linguistics, Chinese Academy of Social Sciences, Beijing 2002. [中国社会科学院 语言研究所 词典编辑室 (编), 现代汉语词典 (汉英双语), 北京 2002. Zhōngguó Shěhuì kēxuéyuàn Yǔyányánjiūsuo Cídiǎnbiānjǐshì (biān), *Xiàndài Hànyǔ Cídiǎn (Hànyīng Shuāngyǔ)*, Běijīng 2002.]
- XHD Hui, Yǔ (ed.), *A New Century Chinese-English Dictionary*, Beijing 2003. [惠宇 (主编), 新世纪汉英大词典, 北京 2003. Hui Yǔ (zhǔbiān), *Xīnshìjì Hànyīng Dàcídiǎn*, Běijīng 2003.]
- XRIS Butanajev, V. Ja., *Xakassko-russkij istoriko-etnografičeskij slovar'*, Abakan 1999.
- XRSa Baskakov, N. A. & A. I. Inkižekova-Grekul, *Xakassko-russkij slovar'*, Moskva 1953.
- XRSb Subrakova, O. V. (ed.), *Xakassko-russkij slovar'*, Novosibirsk 2006.
- XUyL *Xenzuče-Uyğurçe Luğet (sinaq nusxisi)*, [Ürümči] 1974.
- XYHC Léi, Xuǎn-chūn, *Xībù Yùgù-Hàn Cídiǎn*, Chéngdū 1992. [雷選春, 西部裕固漢詞典, 成都 1992.]

## BQ Bilgä Qayan Inscription

## KT Kül Tegin Inscription

- Allen, Richard Hinkley, *Star Names: Their Lore and Meaning*, New York 1963. (unabridged and corrected republication of the work first published by G. E. Stechert in 1899, under the former title: *Star Names and Their Meanings*.)
- Clauson, Sir Gerard, “Early Turkish Astronomical Terms”, *Ural-Altäische Jahrbücher* 35 (1964), pp. 350-368.
- Doerfer, Gerhard, *Türkische und mongolische Elemente im Neupersischen, Band II: Türkische Elemente im Neupersischen*, Wiesbaden 1965.
- \_\_\_\_\_, *Mongolo-Tungusica, Tungusica*; Bd. 3, Wiesbaden 1985.
- Ecsedy, Ildikó, “Far Eastern Sources on the History of the Steppe Region”, *Bulletin de l’Ecole française d’Extrême-Orient* 69 (1981), pp. 263-276.
- Golden, Peter B., “The Turkic Peoples: A Historical Sketch”, in Lars Johanson & Éva Á. Csató (eds.), *The Turkic Languages*, London & New York 1998, pp. 16-29.
- Gyarmati, Imre, “An Enigmatic Turkic Planet Name”, *Acta Orientalia Academiae Scientiarum Hungaricae* 56/1 (2003), pp. 81-86.
- Hornby, A. S., *Oxford Advanced Learner’s Dictionary of Current English*, London 1975<sup>3</sup>.
- Johanson, Lars, “The History of Turkic”, in Lars Johanson & Éva Á. Csató (eds.), *The Turkic Languages*, London & New York 1998, pp. 81-125.
- Kałużyński, Stanisław, *Mongolische Elemente in der jakutischen Sprache*, Warszawa & S-Gravenhage 1962.
- Kaya, Ceval, *Uygurca Altun Yaruk: Giriş, Metin ve Dizin*, Türk Dil Kurumu Yayınları: 607, Ankara 1994.
- Kim, Juwon *et al.*, *Documentation of Endangered Altaic Languages*, Paju 2008. [김주원 외, 사라져가는 알타이언어를 찾아서, 파주 2008.]
- Kim, Juwon *et al.*, *Documentation of Altaic Languages for the Maintenance of Language Diversity*, Paju 2011. [김주원 외, 언어 다양성 보존을 위한 알타이언어 문서화, 파주 2011.]
- Korean History of Science Society (comp.), *Jegaryeoksangjip-Cheonmun ryucho*, Seoul 1983 [韓國科學史學會編, 諸家曆象集-天文類抄, Seoul 1983.]
- Lee, Hong-jik (comp.), *(Enlarged) Encyclopedia of Korean History*, Seoul 2005. [李弘植 (編), (增補)새國史事典, 서울 2005.] (the 19<sup>th</sup> impression of the first edition in 1983)
- Li, Yong Söng, “Zu QWRDNTA in der Tuñuquq Inschrift”, *Central Asiatic Journal* 47/2 (2003), pp. 229-241.
- Ligeti, Louis, “Un vocabulaire sino-ouïgour des Ming. Le Kao-tch’ang-kouan yi-chou de Bureau des Traducteurs”, *Acta Orientalia Academiae Scientiarum Hungaricae* 19 (1966), pp. 117-199, 257-316.
- Mitton, Jacqueline, *Cambridge Illustrated Dictionary of Astronomy*, Cambridge, ... 2007.
- Moore, Sir Patrick (general ed.), *Astronomy Encyclopedia*, New York 2002.
- Nadeljajev, V. M. *et al.* (eds.), *Drevnetjurkskij slovar’*, Leningrad 1969.
- Németh, J., “Über alttürkische Sternnamen”, *Acta Linguistica Academiae Scientiarum Hungaricae* 18/1-2 (1968), pp. 1-6.



- Pulleyblank, Edwin G., *Lexicon of Reconstructed Pronunciation in Early Middle Chinese, Late Middle Chinese, and Early Mandarin*, Van couver 1991.
- Poppe, Nicholas, *Introduction to Altaic Linguistics*, Ural-altaische Bibliothek; XIV, Wiesbaden 1965.
- Pröhle, Wilhelm, “Karatschajisches Wörterverzeichnis”, *Keleti Szemle* 10 (1909), pp. 83-150.
- \_\_\_\_\_, “Balkarische Studien”, *Keleti Szemle* 15 (1915), pp. 165-276.
- Räsänen, Martti, *Versuch eines etymologischen Wörterbuchs der Türk sprachen*, Lexica Societatis Fenno-Ugricae XVII, 1, Helsinki 1969.
- Redhouse, Sir James W., *A Turkish and English Lexicon shewing in English the significations of the Turkish terms*, printed for the American Mission by A. H. Boyajian, Constantinople 1890.
- Schönig, Claus, *Mongolische Lehnwörter im Westoghusischen*, Turcologica 47, Wiesbaden 2000.
- Simpson, J. A. & E. S. C. Weiner, *The Oxford English Dictionary*, vol. XIX, Oxford 1989<sup>2</sup>.
- Song, Ki-joong (comp.), *Glossary of Korean Culture*, Seoul 2001. [송기중 (편), 한·영 우리 문화 용어집, 서울 2001.]
- Tamura, Jitsuzo, Shunju Imanishi & Hisashi Sato, *Wu-T'i Ch'ing-Wên-Chien*, Translated and Explained, Institute for Inland Asian Studies, Faculty of Letters, Kyoto University, Kyoto 1966 [田村實造, 今西春秋, 佐藤長 共編, 五體清文鑑譯解, 京都大學文學部 内陸アジア研究所, 京都: 1966.]
- Tekin, Talat, *A Grammar of Orkhon Turkic*, Indiana University Publications, Uralic and Altaic Series, vol. 69, Bloomington & The Hague 1968.
- \_\_\_\_\_, “A New Classification of the Turkic Languages”, *Türk Dilleri Araştırmaları (Researches in Turkic Languages)* 1 (1991), pp. 5-18.
- \_\_\_\_\_ & Mehmet Ölmez, *Türk Dilleri — Giriş —*, İstanbul 1999.
- \_\_\_\_\_, *Researches into the Orkhon Inscriptions — Kül Tigin Inscription, Bilgä Kagan Inscription, Tuñukuk Inscription —*, translated and annotated by Yong-Söng Li, Seoul 2008. [Talat Tekin (저), 이용성 (역), 돌궐 비문 연구: 쿨 티긴 비문, 빌개 카간 비문, 투뉴쿠크 비문, 서울 2008.]
- The Encyclopedia Americana – International Edition*, Vol. 7, Danbury 1994.
- The New Encyclopædia Britannica, Macropædia*, Vol. 27, Chicago/ London/ New Delhi/ Paris/Seoul/Sydney/Taipei/Tokyo 2007<sup>15</sup>.
- The New International Webster's Comprehensive Dictionary of the English Language — Deluxe Encyclopedic Edition —*, Naples, FL 2003.
- There are following articles according to DWS 7-15:
- Anikin, A. Je., ‘K tipologii nazvanij Bol’šoj Medvedicy v jazykax Sibiri’, *Izvestija Sibirskogo otdelenija Akademii nauk SSSR. Serija istorii, filologii i filosofii* 3 (1990), pp. 18-22.
- Mándoki, L., ‘Asiatische Sternnamen’ in V. Diószegi (ed.), *Glaubenswelt und Folklore der sibirischen Völker*, Budapest 1963, pp. 519-532.

Zieme, P., 'Hatte der Große Bär bei den Uiguren neun Sterne?' in K. Röhrborn & W. Veenker (eds.), *Memoriae Munusculum* [Gedenkband A. v. Gabain], Wiesbaden 1994, pp. 149-154.

There are also the following articles according to the Abbreviations in Gyarmati (2003: 85):  
Bazin, L., "Über die Sternkunde in alttürkischer Zeit", *Abhandlungen der Geistes- und Sozialwissenschaftlichen Klasse / Akademie der Wissenschaften und der Literatur in Mainz*, Jahrgang 1963, Nr. 5, pp. 571-582.

Gyarmati, I, "Die Gestirnnamen des Zodiakus in den türkischen Sprachen", *Acta Orientalia Academiae Scientiarum Hungaricae* 40/1 (1986), pp. 53-106.

[http://altaireal.snu.ac.kr/askreal\\_v25/](http://altaireal.snu.ac.kr/askreal_v25/) (2013-02-03)

[http://altaireal.snu.ac.kr/askreal\\_v25/fieldresearch/m\\_viewphotothumb\\_full.asp?rcode=rid0008&ccode=c07&ecomment=Short+Consultant,+Vladimir+Jegorovich+TAN-NAGASHEV](http://altaireal.snu.ac.kr/askreal_v25/fieldresearch/m_viewphotothumb_full.asp?rcode=rid0008&ccode=c07&ecomment=Short+Consultant,+Vladimir+Jegorovich+TAN-NAGASHEV) (2013-02-02) (Short is an editorial error for Shor.)

[http://altaireal.snu.ac.kr/askreal\\_v25/fieldresearch/m\\_viewphotothumb\\_full.asp?rcode=rid0020&ccode=c06&ecomment=Tuvan+\(Tuwa\)+Consultant,+Machigir](http://altaireal.snu.ac.kr/askreal_v25/fieldresearch/m_viewphotothumb_full.asp?rcode=rid0020&ccode=c06&ecomment=Tuvan+(Tuwa)+Consultant,+Machigir) (2013-02-02)

[http://altaireal.snu.ac.kr/askreal\\_v25/fieldresearch/m\\_viewphotothumb\\_full.asp?rcode=rid0020&ccode=c07&ecomment=Tuvan+\(Tuwa\)+Consultant,+QADYRKHAN](http://altaireal.snu.ac.kr/askreal_v25/fieldresearch/m_viewphotothumb_full.asp?rcode=rid0020&ccode=c07&ecomment=Tuvan+(Tuwa)+Consultant,+QADYRKHAN) (2013-02-02)

[http://altaireal.snu.ac.kr/askreal\\_v25/fieldresearch/m\\_viewphotothumb\\_full.asp?rcode=rid0022&ccode=c19&ecomment=Tsaatan+Consultant,+Dagjiy](http://altaireal.snu.ac.kr/askreal_v25/fieldresearch/m_viewphotothumb_full.asp?rcode=rid0022&ccode=c19&ecomment=Tsaatan+Consultant,+Dagjiy) (2013-02-02)

[http://altaireal.snu.ac.kr/askreal\\_v25/fieldresearch/m\\_viewphotothumb\\_full.asp?rcode=rid0024&ccode=c06&ecomment=West+Yugur+\(Yugu\)+Consultant,+An+Yuling](http://altaireal.snu.ac.kr/askreal_v25/fieldresearch/m_viewphotothumb_full.asp?rcode=rid0024&ccode=c06&ecomment=West+Yugur+(Yugu)+Consultant,+An+Yuling) (2013-02-02)

[http://altaireal.snu.ac.kr/askreal\\_v25/fieldresearch/m\\_viewphotothumb\\_full.asp?rcode=rid0024&ccode=c07&ecomment=West+Yugur+\(Yugu\)+Consultant,+Tuo+Zirong](http://altaireal.snu.ac.kr/askreal_v25/fieldresearch/m_viewphotothumb_full.asp?rcode=rid0024&ccode=c07&ecomment=West+Yugur+(Yugu)+Consultant,+Tuo+Zirong) (2013-02-02)

[http://altaireal.snu.ac.kr/askreal\\_v25/fieldresearch/m\\_viewphotothumb\\_full.asp?rcode=rid0027&ccode=c08&ecomment=Gagauz+consultant,+Fedora+Ivanovna+AR-NAUT](http://altaireal.snu.ac.kr/askreal_v25/fieldresearch/m_viewphotothumb_full.asp?rcode=rid0027&ccode=c08&ecomment=Gagauz+consultant,+Fedora+Ivanovna+AR-NAUT) (2013-02-02)

[http://altaireal.snu.ac.kr/askreal\\_v25/fieldresearch/m\\_viewphotothumb\\_full.asp?rcode=rid0027&ccode=c09&ecomment=Urum+consultant,+Valerij+Ivanovich+KIOR](http://altaireal.snu.ac.kr/askreal_v25/fieldresearch/m_viewphotothumb_full.asp?rcode=rid0027&ccode=c09&ecomment=Urum+consultant,+Valerij+Ivanovich+KIOR) (2013-02-02)

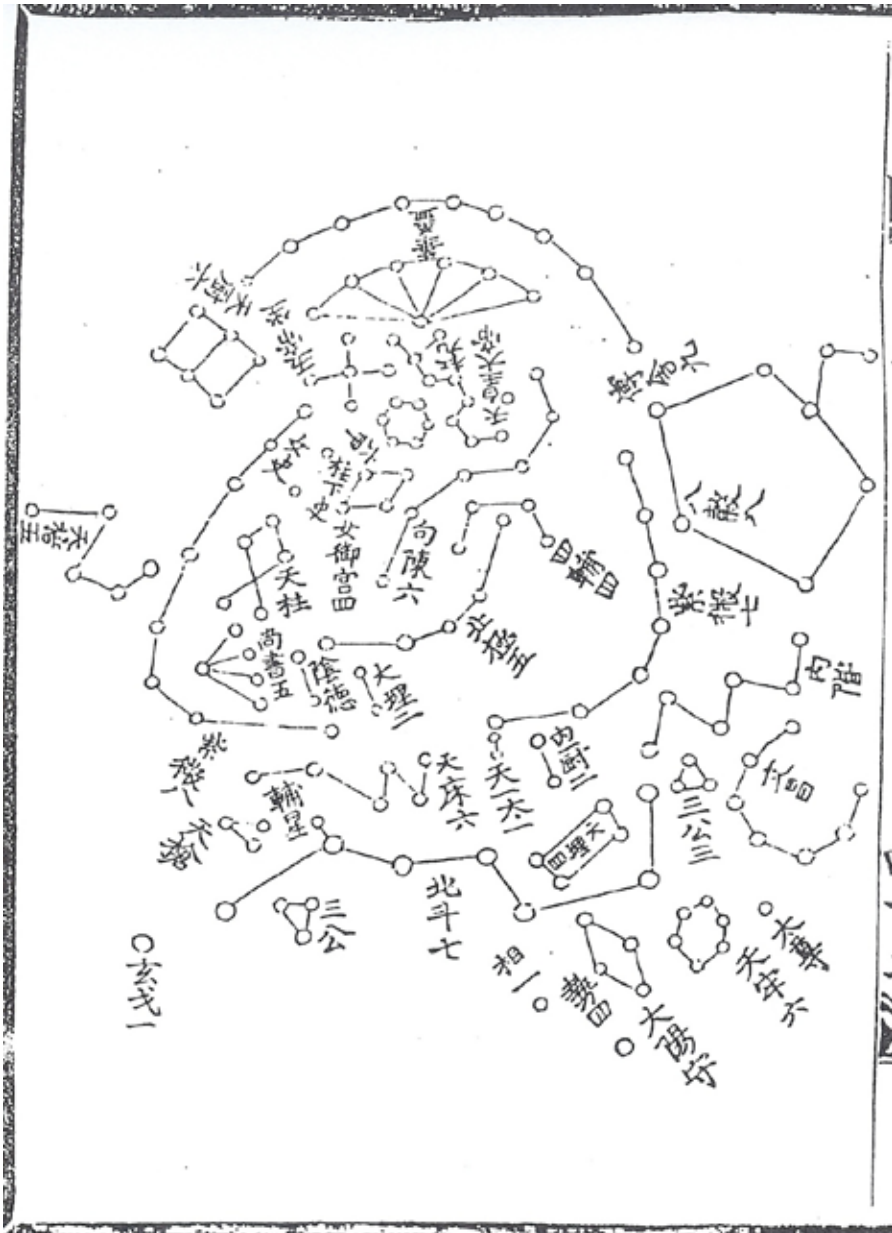
[http://altaireal.snu.ac.kr/askreal\\_v25/fieldresearch/m\\_viewphotothumb\\_full.asp?rcode=rid0037&ccode=c05&ecomment=Tatar+consultant,+Amina+Zakirovna+ABANEJEVA](http://altaireal.snu.ac.kr/askreal_v25/fieldresearch/m_viewphotothumb_full.asp?rcode=rid0037&ccode=c05&ecomment=Tatar+consultant,+Amina+Zakirovna+ABANEJEVA) (2013-02-02)

[http://altaireal.snu.ac.kr/askreal\\_v25/fieldresearch/m\\_viewphotothumb\\_full.asp?rcode=rid0040&ccode=c19&ecomment=Tuvan+ÄœÄ¼rin+Urianhkai+consultant,+BAASANZHAV](http://altaireal.snu.ac.kr/askreal_v25/fieldresearch/m_viewphotothumb_full.asp?rcode=rid0040&ccode=c19&ecomment=Tuvan+ÄœÄ¼rin+Urianhkai+consultant,+BAASANZHAV) (2013-02-02)

[http://altaireal.snu.ac.kr/askreal\\_v25/fieldresearch/m\\_viewphotothumb\\_full.asp?rcode=rid0046&ccode=c03&ecomment=Krygyz+consultant,+ToktobÄ¼bÄ¼+Akmato-va](http://altaireal.snu.ac.kr/askreal_v25/fieldresearch/m_viewphotothumb_full.asp?rcode=rid0046&ccode=c03&ecomment=Krygyz+consultant,+ToktobÄ¼bÄ¼+Akmato-va) (2013-02-02) (Krygyz is an editorial error for Kyrgyz.)

- [http://altaireal.snu.ac.kr/askreal\\_v25/fieldresearch/m\\_viewphotothumb\\_full.asp?r-code=rid0046&ccode=c05&ecomment=Krygyz+consultant,+Karamat+KHAMIDOVA](http://altaireal.snu.ac.kr/askreal_v25/fieldresearch/m_viewphotothumb_full.asp?r-code=rid0046&ccode=c05&ecomment=Krygyz+consultant,+Karamat+KHAMIDOVA)  
(2013-02-02)
- [http://altaireal.snu.ac.kr/askreal\\_v25/fieldresearch/m\\_viewphotothumb\\_full.asp?r-code=rid0046&ccode=c07&ecomment=Krygyz+consultant,+Dzhengish+Imanaljeva](http://altaireal.snu.ac.kr/askreal_v25/fieldresearch/m_viewphotothumb_full.asp?r-code=rid0046&ccode=c07&ecomment=Krygyz+consultant,+Dzhengish+Imanaljeva)  
(2013-02-02)
- [http://altaireal.snu.ac.kr/askreal\\_v25/fieldresearch/m\\_viewphotothumb\\_full.asp?r-code=rid0046&ccode=c08&ecomment=Krygyz+consultant,+NazgÄ¼l+Mazekova](http://altaireal.snu.ac.kr/askreal_v25/fieldresearch/m_viewphotothumb_full.asp?r-code=rid0046&ccode=c08&ecomment=Krygyz+consultant,+NazgÄ¼l+Mazekova)  
(2013-02-02)
- [http://altaireal.snu.ac.kr/askreal\\_v25/fieldresearch/m\\_viewphotothumb\\_full.asp?r-code=rid0047&ccode=c06&ecomment=Dolgan+consultant,+Anna+Grigor`evna+CH-UPRINA](http://altaireal.snu.ac.kr/askreal_v25/fieldresearch/m_viewphotothumb_full.asp?r-code=rid0047&ccode=c06&ecomment=Dolgan+consultant,+Anna+Grigor`evna+CH-UPRINA) (2013-02-02)
- [http://altaireal.snu.ac.kr/askreal\\_v25/fieldresearch/m\\_viewphotothumb\\_full.asp?r-code=rid0047&ccode=c07&ecomment=Dolgan+consultant,+Jelena+Polikarpovna+TI-MOFEJEVA](http://altaireal.snu.ac.kr/askreal_v25/fieldresearch/m_viewphotothumb_full.asp?r-code=rid0047&ccode=c07&ecomment=Dolgan+consultant,+Jelena+Polikarpovna+TI-MOFEJEVA) (2013-02-02)
- [http://altaireal.snu.ac.kr/askreal\\_v25/fieldresearch/m\\_viewphotothumb\\_full.asp?r-code=rid0052&ccode=c05&ecomment=Karaim+consultant,+Lidia+MASZKIEWICZ](http://altaireal.snu.ac.kr/askreal_v25/fieldresearch/m_viewphotothumb_full.asp?r-code=rid0052&ccode=c05&ecomment=Karaim+consultant,+Lidia+MASZKIEWICZ)  
(2013-02-02)
- [http://altaireal.snu.ac.kr/askreal\\_v25/fieldresearch/m\\_viewphotothumb\\_full.asp?r-code=rid0052&ccode=c06&ecomment=Karaim+consultant,+Szymon+JUKHNIEWICZ](http://altaireal.snu.ac.kr/askreal_v25/fieldresearch/m_viewphotothumb_full.asp?r-code=rid0052&ccode=c06&ecomment=Karaim+consultant,+Szymon+JUKHNIEWICZ)  
(2013-02-02)
- [http://altaireal.snu.ac.kr/askreal\\_v25/fieldresearch/m\\_viewphotothumb\\_full.asp?r-code=rid0052&ccode=c08&ecomment=Karaim+consultant,+Juzef+FIRKOWICZ](http://altaireal.snu.ac.kr/askreal_v25/fieldresearch/m_viewphotothumb_full.asp?r-code=rid0052&ccode=c08&ecomment=Karaim+consultant,+Juzef+FIRKOWICZ)  
(2013-02-02)
- [http://altaireal.snu.ac.kr/askreal\\_v25/fieldresearch/m\\_viewphotothumb\\_full.asp?r-code=rid0052&ccode=c09&ecomment=Karaim+consultant,+Marek+LAWRINOWICZ](http://altaireal.snu.ac.kr/askreal_v25/fieldresearch/m_viewphotothumb_full.asp?r-code=rid0052&ccode=c09&ecomment=Karaim+consultant,+Marek+LAWRINOWICZ)  
(2013-02-02)
- [http://altaireal.snu.ac.kr/askreal\\_v25/fieldresearch/m\\_viewphotothumb\\_full.asp?r-code=rid0054&ccode=c12&ecomment=Bashkir+consultant,+Buljak+Batyrgareje-  
vna+SHAKUROVA](http://altaireal.snu.ac.kr/askreal_v25/fieldresearch/m_viewphotothumb_full.asp?r-code=rid0054&ccode=c12&ecomment=Bashkir+consultant,+Buljak+Batyrgareje-<br/>vna+SHAKUROVA) (2013-02-02)
- [http://altaireal.snu.ac.kr/askreal\\_v25/fieldresearch/m\\_viewphotothumb\\_full.asp?r-code=rid0063&ccode=c06&ecomment=Hakas+consultant,+Il`ja+Prokop`jevich+TOPO-  
JEV](http://altaireal.snu.ac.kr/askreal_v25/fieldresearch/m_viewphotothumb_full.asp?r-code=rid0063&ccode=c06&ecomment=Hakas+consultant,+Il`ja+Prokop`jevich+TOPO-<br/>JEV) (2013-02-02)
- [http://altaireal.snu.ac.kr/askreal\\_v25/fieldresearch/m\\_viewphotothumb\\_full.asp?r-code=rid0063&ccode=c07&ecomment=Hakas+consultant,+Oleg+Petrovich+SHULBA-  
JEV](http://altaireal.snu.ac.kr/askreal_v25/fieldresearch/m_viewphotothumb_full.asp?r-code=rid0063&ccode=c07&ecomment=Hakas+consultant,+Oleg+Petrovich+SHULBA-<br/>JEV) (2013-02-02)
- [http://altaireal.snu.ac.kr/askreal\\_v25/fieldresearch/m\\_viewphotothumb\\_full.asp?r-code=rid0063&ccode=c08&ecomment=Hakas+consultant,+Jekaterina+Nikolaje-  
vna+TOLMACHEVA](http://altaireal.snu.ac.kr/askreal_v25/fieldresearch/m_viewphotothumb_full.asp?r-code=rid0063&ccode=c08&ecomment=Hakas+consultant,+Jekaterina+Nikolaje-<br/>vna+TOLMACHEVA) (2013-02-02)
- [http://altaireal.snu.ac.kr/askreal\\_v25/fieldresearch/m\\_viewphotothumb\\_full.asp?r-code=rid0063&ccode=c09&ecomment=Hakas+consultant,+Valentina+Petrovna+JAN-  
GULOVA](http://altaireal.snu.ac.kr/askreal_v25/fieldresearch/m_viewphotothumb_full.asp?r-code=rid0063&ccode=c09&ecomment=Hakas+consultant,+Valentina+Petrovna+JAN-<br/>GULOVA) (2013-02-02)
- [http://altaireal.snu.ac.kr/askreal\\_v25/fieldresearch/m\\_viewphotothumb\\_full.asp?r-code=rid0063&ccode=c11&ecomment=Hakas+consultant,+Jefrosinija+Vasilijevna+I-  
TIGECHEVA+and+Jekaterina+Pavlovna+ULCHUGACHEVA](http://altaireal.snu.ac.kr/askreal_v25/fieldresearch/m_viewphotothumb_full.asp?r-code=rid0063&ccode=c11&ecomment=Hakas+consultant,+Jefrosinija+Vasilijevna+I-<br/>TIGECHEVA+and+Jekaterina+Pavlovna+ULCHUGACHEVA) (2013-02-02)

- [http://altaireal.snu.ac.kr/askreal\\_v25/fieldresearch/m\\_viewphotothumb\\_full.asp?rcode=rid0063&cocode=c13&ecomment=Hakas+consultant,+Alekselj+Ivanovich+KOTZHEKOV](http://altaireal.snu.ac.kr/askreal_v25/fieldresearch/m_viewphotothumb_full.asp?rcode=rid0063&cocode=c13&ecomment=Hakas+consultant,+Alekselj+Ivanovich+KOTZHEKOV) (2013-02-02)
- [http://altaireal.snu.ac.kr/askreal\\_v25/fieldresearch/m\\_viewphotothumb\\_full.asp?rcode=rid0063&cocode=c14&ecomment=Hakas+consultant,+Rima+Konstantinovna+KOCHELOROVA](http://altaireal.snu.ac.kr/askreal_v25/fieldresearch/m_viewphotothumb_full.asp?rcode=rid0063&cocode=c14&ecomment=Hakas+consultant,+Rima+Konstantinovna+KOCHELOROVA) (2013-02-02)
- [http://altaireal.snu.ac.kr/askreal\\_v25/fieldresearch/m\\_viewphotothumb\\_full.asp?rcode=rid0066&cocode=c03&ecomment=Altai+consultant,+Tamara+Jemel'janovna+ORSULOVA](http://altaireal.snu.ac.kr/askreal_v25/fieldresearch/m_viewphotothumb_full.asp?rcode=rid0066&cocode=c03&ecomment=Altai+consultant,+Tamara+Jemel'janovna+ORSULOVA) (2013-02-02)
- [http://altaireal.snu.ac.kr/askreal\\_v25/fieldresearch/m\\_viewphotothumb\\_full.asp?rcode=rid0066&cocode=c04&ecomment=Altai+consultant,+Ljudmila+Mixajlovna+ABYSHEVA](http://altaireal.snu.ac.kr/askreal_v25/fieldresearch/m_viewphotothumb_full.asp?rcode=rid0066&cocode=c04&ecomment=Altai+consultant,+Ljudmila+Mixajlovna+ABYSHEVA) (2013-02-02)
- [http://altaireal.snu.ac.kr/askreal\\_v25/fieldresearch/m\\_viewphotothumb\\_full.asp?rcode=rid0066&cocode=c05&ecomment=Altai+consultant,+Raisa+Atvasovna+PALKINA](http://altaireal.snu.ac.kr/askreal_v25/fieldresearch/m_viewphotothumb_full.asp?rcode=rid0066&cocode=c05&ecomment=Altai+consultant,+Raisa+Atvasovna+PALKINA) (2013-02-02)
- [http://altaireal.snu.ac.kr/askreal\\_v25/fieldresearch/m\\_viewphotothumb\\_full.asp?rcode=rid0066&cocode=c06&ecomment=Altai+consultant,+Alekselj+Angelejevich+SUMACHAKOV](http://altaireal.snu.ac.kr/askreal_v25/fieldresearch/m_viewphotothumb_full.asp?rcode=rid0066&cocode=c06&ecomment=Altai+consultant,+Alekselj+Angelejevich+SUMACHAKOV) (2013-02-02)
- [http://altaireal.snu.ac.kr/askreal\\_v25/fieldresearch/m\\_viewphotothumb\\_full.asp?rcode=rid0066&cocode=c09&ecomment=Altai+consultant,+Anastasija+Semjonovna+TODOZHOKOVA](http://altaireal.snu.ac.kr/askreal_v25/fieldresearch/m_viewphotothumb_full.asp?rcode=rid0066&cocode=c09&ecomment=Altai+consultant,+Anastasija+Semjonovna+TODOZHOKOVA) (2013-02-02)
- [http://altaireal.snu.ac.kr/askreal\\_v25/fieldresearch/m\\_viewphotothumb\\_full.asp?rcode=rid0066&cocode=c10&ecomment=Altai+consultant,+Trifon+Dmitrijevich+BELEJEV](http://altaireal.snu.ac.kr/askreal_v25/fieldresearch/m_viewphotothumb_full.asp?rcode=rid0066&cocode=c10&ecomment=Altai+consultant,+Trifon+Dmitrijevich+BELEJEV) (2013-02-02)
- [http://www.cld-korea.org/eng/archives/archives\\_1.php](http://www.cld-korea.org/eng/archives/archives_1.php) (2012-11-15)
- <http://www.geonames.de/planets.html> (2012-10-23)



<The Purple Forbidden enclosure map<sup>83</sup>>

83 Korean History of Science Society (comp.) 1983: 470.

