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Early Turkish Astronomical Terms

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I must preface this paper by admitting that my knowledge of astronomy is extremely scanty and apologizing in advance for any technical errors of which I may be guilty.

In any area where the night skies are reasonably clear, it is obvious that primitive man must have been a star-gazer, and must at a fairly early stage have reached the (erroneous) conclusion that the earth was flat and was covered by a solid dome-shaped roof to which the fixed stars were attached. He must have noticed that this roof seemed to revolve round a fixed point in the heavens, and that the sun, moon and a few stars, the planets, moved independently of the roof. (It should be noted that in most primitive terminologies the word which must be translated 'planet' applied to the sun and moon as well as to the planets in our sense of the word.) Further observation must have shown him that the moon waxed and waned over a period of about twenty-eight days, following the same course over the underside of this "roof" in each successive period, and that the sun too followed a regular course, rising at intervals of approximately twenty-four hours, but, owing to the apparent revolution of the "roof", at a slightly different point in relation to it on each successive day, and yet at approximately the same point at the same season in each successive year. From this it was a short step to establish a relationship between the sun and the day and year and the moon and a month of about twenty-eight days with about twelve lunar months to the solar year. (The further sophistication of dividing the day into fixed periods, hours and the like, came later.) All these discoveries were no doubt made quite independently by little groups of primitive peoples in different parts of the world very early in the history of mankind; in other words astronomy, as a primitive science, was developed quite independently by each of these groups, and with it the technical terms necessary for its exposition and transmission from generation to generation.

Some primitive peoples came to the conclusion that the sun and the moon, and sometimes some of the planets, were divinities which not only marked the succession of the seasons but also caused it. From this it was an easy step to assume that the movements of the heavenly bodies had an influence on human destinies and that these influences could be predicted and perhaps even affected by human action. Among such peoples, therefore, astronomy developed, or degenerated, into astrology.

The study of the movements of the moon in some communities gave birth to the concept of twenty-eight lunar mansions (or stations), that is groups of fixed stars in the vicinity of which the moon could be observed on the same day of each successive lunar month, and the combination of the concept of month with the observed movements of the sun gave birth to the concept of the signs of the zodiac, that is twelve groups of fixed stars in the vicinity of which the sun rose in the twelve months of the solar year. (I will not go here into the horrible complications which arose from the fact that the lunar month was a few hours

longer than twenty-eight days and the solar year some eleven days longer than twelve lunar months.) It should be noted that the Chinese and Indian numerations of the lunar mansions differed, the first Chinese mansion corresponding to the twelfth Indian mansion, and so on. In what follows I have adopted the Chinese numeration. It should also be noted that there is a broad correlation between the lunar mansions and the signs of the zodiac, the first and second mansions, for example, lying in the neighbourhood of Virgo, the sixth sign of the zodiac.

We know very little about the level of astronomical knowledge which the Turkish peoples had reached before they came into contact with their more sophisticated neighbours; our earliest documents date from a period some centuries later than those first contacts. It is reasonable to infer that, as inhabitants from time immemorial of the Asiatic steppes with their clear night skies, they would, whether as hunters, pastoralists or, in a small way, agriculturalists, have taken a practical interest in the movements of the heavenly bodies as an indication of the seasons of the year and as useful direction finders for travel, particularly at night, and it is certain that they had their own technical terms for the main astronomical phenomena (including day, month and year) and a limited number of the heavenly bodies, but there is no evidence that they regarded those bodies as deities, although they did regard 'heaven' (**teŋri**: a different word from **kö:k** 'sky') as some kind of a deity; and there is no evidence that they had evolved a native astrology. Nor is there any evidence that they had evolved the concepts of lunar mansions and signs of the zodiac before they came into contact with their more sophisticated neighbours, although later they learnt a good deal about both from those neighbours.

It is important to remember one point in connection with all primitive "do-it-yourself" systems of astronomy. It was easy to identify, and so to name, some of the major heavenly bodies, the sun, the moon, the larger planets, particularly bright fixed stars and very distinctive groups of stars like Ursa Major and the Pleiades, but beyond that point any grouping of stars into constellations was a more or less arbitrary business, and finding names for such constellations an exercise in imagination. Thus for example in the English-speaking world Ursa Major is called sometimes 'the Great Bear' and sometimes 'the Big Dipper', while its Arabic name, *banāt na'š* means 'daughters of a bier'. Similarly, the sign of the zodiac which is called Virgo, 'the virgin', in European terminology is called 'the ear of wheat' in Arabic. In particular the concept of lunar mansions is a highly artificial one, and it would be unrealistic to suppose that when the early Turks became familiar with that concept there would be any close correspondence between the stars and constellations for which they already had their own names and the groups of stars which had been chosen by their neighbours as the individual lunar mansions. Similarly it is very unlikely that they had their own names for the signs of the zodiac. It is, therefore, very difficult to work back from the more sophisticated astronomies of the Chinese and Arabs and establish the exact meanings of some of the native Turkish names for stars and constellations.

It is a well-established principle of philology that every people has words in its own language for things and ideas with which it has become acquainted in its primitive, isolated state, and uses loan words, or the literal translations of

foreign words used metaphorically, for things and ideas which it acquires from its neighbours. As a general rule foreign things and ideas and the foreign names for them are acquired, so to speak, in a single packet.

The purpose of this paper is to establish and list, so far as is possible in the present stage of our knowledge, the surviving repertoire of native Turkish astronomical terms. I have interpreted this phrase broadly enough to include cognate ideas such as 'day' and 'month', but not so broadly as to include natural phenomena like 'rainbow'. My list is not likely to be complete, other terms may be found later, but it will at any rate provide an introduction to the subject.

The following is a list, possibly incomplete, of all those early documents which can provide the raw material for such a list. I have omitted those which merely refer to, say, the sun and moon, and then only incidentally.

1. The oldest is the document in "Runic" script and the Türkü language, obviously Manichaean in context and translated from a Sogdian original, probably in the 8th or 9th Century A. D., which is headed "Here begin the seven planets (*payar*, Sogdian *pγ'r*)" and goes on to refer to them agio relationship between them and certain precious stones. It was found at Toyok and the most convenient edition of it is in H. N. ORKUN, „Eski Türk Yazıtları", Vol II, Istanbul, 1939, pages 57 ff.

2. There are some names of heavenly bodies in a fairly early Uyghur translation of a Chinese Buddhist *sūtra*, called in Turkish „Sekiz Yükmek Sutra", published by W. BANG, A. VON GABAIN, and G. R. RACHMATI in Türkische Turfantexte VI, S. P. A. W., Berlin 1934. (I shall in future abbreviate „Türkische Turfantexte" to *TT*.) Prof. W. EBERHARD has however pointed out in *TT* VII, Berlin 1936, page 76, that the passage relates to Chinese astrology and not sober astronomy.

3. There are several Uyghur astronomical and calendar texts in G. R. RACHMATI, *TT* VII. With one exception to be mentioned below, they are all translations of foreign texts, mainly Chinese with an Indian background, and they seem to be, for Uyghur, very late, where datable of the 13th or 14th Centuries. There are one astronomical and one calendar text in Uyghur in A. VON GABAIN, *TT* VIII, Berlin, 1954, presumably rather earlier since they are in the Brāhmī script.

4. The earliest language in which substantial parts of the native terminology have been preserved is Khāqānī, in which there are two major authorities, both written in the third quarter of the 11th Century. Several astronomical terms are listed and translated in the *Dīwān Luġāt at-Turk* of Maḥmūd al-Kāšġarī. In quoting this work I shall refer to B. ATALAY's translation „Diwanü Luğat-it-Türk", 3 volumes, Ankara 1940–41, as *Kaš.* followed by the volume and page numbers. There are also several passages containing such terms in Yūsuf Khass Ḥāǧib's *Qutaǧγu Bilig*. References, in the form *KB* verse so-and-so, are to R. R. ARAT's critical edition, İstanbul 1947. The most important are:

(i) Chapter V (verses 124–147) entitled "The seven stars and the twelve signs of the zodiac".

(ii) [illegible] Chapter IV.

(iii) the description of Ögdülmiš's three sleepless nights in verses 4888 ff., 5673 ff. and 6210 ff.

5. There is a list of the planets and signs of the zodiac in the „Qiṣaṣ al-Anbiyā" of Nāṣir ad-dīn Rabġūzī (quoted hereafter as *Rabġūzī*) written in late Khākānī and finished in A. D. 1310. The version which I have used is that of the British Museum MS. Add. 7851, reproduced in K. GRØNBECH, „Rabghuzi, Narrationes de Prophetis", Copenhagen 1948. Even in this manuscript the text is corrupt in some places: it is more corrupt in ILMINSKI's wellknown edition, Kazan 1859, from which there are several quotations in W. RADLOFF's „Wörterbuch", and probably more corrupt still in later Kazan editions like one of 1905 in my possession.

6. Ǧalāl ad-dīn ibn al-Muhannā's *Ḥilyat al-insān wa ḥalbat al-lisān* (quoted hereafter as *Ibn Muhannā*) is a set of three classified vocabularies, Arabic-Persian, Arabic-Turkish and Arabic-Mongolian, written probably early in the 14th Century in Iraq or perhaps Persian Azerbaijan. The author claimed to be recording the Turkish spoken in "our country" with some references to that spoken in "Turkistan", that is presumably an early form of Azerbaijani and a late form of Khāqānī. I have used the edition of the complete text published by KILISLI MU'ALLIM RIF'AT in İstanbul in 1921. Chapters 8 of the Persian, 21 of the Turkish and 9 of the Mongolian vocabularies contain some astronomical terms; the lists of Arabic words translated are different in each case.

7. There are five "Arabic-Kipčak" vocabularies containing some astronomical terms mainly in the Kipčak (and to some extent Türkmen) dialects spoken in Egypt. The oldest, fully classified, is the anonymous work in Leiden MS. No 517 Warner, written in A. D. 1245, possibly in Persia or Transoxiana, and containing a substantial Arabic-Turkish and a smaller Arabic-Mongolian vocabulary. The former (quoted hereafter as *Houtsma*, followed by the page and line of the Arabic text) was published in M. T. HOUTSMA, Ein Türkisch-Arabisches Glossar, Leiden 1894. Chapter I (p. 5) contains one or two astronomical terms, but is scanty. There are two 14th Century vocabularies. The *Kitāb al-idrāk li-lisān al-Atrāk* of Abū Ḥayān published by A. CAFEROĞLU, İstanbul 1931, an alphabetical list of Turkish words with Arabic equivalents (quoted hereafter as *Kitāb al-idrāk* followed by the page) contains only one or two terms. *al-Bulġat al-muštāq fi-luġat at-Turk wa'l-Qiṣṣāq* published by Professor A. ZAJĄCZKOWSKI in „Manuel de la langue des Turcs et des Kiptchaks", Warsaw 1938 (quoted hereafter as *Bulġat* followed by the page and line) is a fully classified Arabic vocabulary with Turkish translations. Chapter I contains a number of astronomical terms. Of the two 15th Century vocabularies *at-Tuḥfat az-zakiya fi'l-luġat at-Turkiya* (quoted hereafter as *Tuḥfat* followed by the folio, side and line of the facsimile) is an extensive list of Arabic words with Turkish equivalents but contains only a few astronomical terms. I have used the edition by B. ATALAY, Istanbul 1945. *al-Qawānin al-kulliya li-ḍabṭ al-luġat at-Turkiya*, published by KÖPRÜLÜZADE MEHMED FU'AD (Professor F. KÖPRÜLÜ), Istanbul 1928 (quoted hereafter as *Qawānin* followed by the page and line) is a partially classified Arabic vocabulary with Turkish equivalents; Chapter I of Section V (page 58) contains a few astronomical terms.

8. The „*Sanglakh*", the best Čaghatay-Persian dictionary, contains a few astronomical terms which I have tried to collect. I have used the facsimile published in Vol. XX of the E. J. W. Gibb Memorial, New Series, with an introduction and indices by myself, quoted hereafter as *Sanglakh* followed by the folio, side and line.

The information contained in these documents can be summarized as follows: No. 1, the Türkü document from Toyok can be dealt with very briefly. In fact only five planets are mentioned, in the following order: – Mercury **Tïr**; Jupiter **Ormïzt**; Venus **Naγïd**; Saturn **Kïwan**; the moon **Ay**. These names are merely transcriptions of the Sogdian, and except for **Ormïst**, which, as **Xormuzda**, is used as a divine name, usually for Indra, in texts translated from Sogdian, none of them reappears in any other Turkish text.

No. 2. The passage referred to in the „Sekiz Yükmek" is in lines 78 and following, and directs that the *sūtra* should be recited three times when a new house or town is being built in order to drive away the evil spirits. The terminology is that of Chinese astrology, for example Jupiter appears as **Taysuy**, a simple transcription of the Chinese name. The only Turkish terms used are **kün** "sun" and **ay** "moon".

No. 3. The only Turkish terms used in the Uyghur translations of Chinese astronomical and calendar texts in *TT* VII and VIII are **kün**, 'sun' and 'day', **ay**, 'moon' and 'month', and **yulduz**'star'.

The only exceptional document is a scrap of paper, T II D 79, published in *TT* VII p. 57, with facsimile No. III in Plate 2. It cannot be dated closely; the Uyğur script is reasonably good, but there is some internal evidence that it, like No. 42 in the same volume, is a transcription of a text in Arabic script; if so it can hardly be earlier than the 12th, or at earliest the 11th Century. It is part of a list of the Chinese lunar mansions in Uyghur transcription with the Turkish equivalents. The Chinese column can be reconstructed to represent the 18th to the 23rd mansions. As pointed out above we cannot expect the Turkish column to provide more than rough equivalents of the Chinese terms.

The Chinese name of the 18th mansion is missing, but as the entry in the Turkish column is **tïlker yulduz**, which is certainly "the Pleiades", it must have been *mao*, which is also the Pleiades. The second (first surviving) entry in the Chinese column is *pir*, that is *pi*, the 19th mansion, six stars in the Hyades and two in Taurus. The Turkish equivalent is easy to read but hard to transcribe, apparently **bay** (or **q**) **rso** (or **u**) **γ** (or **q**) **ra** (or **n**) **yulduz**. This cannot represent **bakïr sokum**, which is Mars, but could be a misreading of **yayïz sïyïn** in Arabic script. This point is discussed below. The third (second) entry in the Chinese column is *tsui*, the 20th mansion, *lamda*, *phi*[1] and *phi*[2] in the head of Orion. The Turkish equivalent is **erentïr yulduz**, which seems to be a misreading of erentïz in Arabic script, see **eren tïl:z** below. The fourth line is an obvious muddle. The Chinese column has *šem*, that is *shên*, the 21st mansion, seven stars in Orion, but the Turkish equivalent is **quysuq** (or **γ**) **yulduz**, which is obviously a transcription of *kuei su*, the Chinese name of the 23rd mansion, four stars in Cancer. The fifth (fourth) entry in the Chinese column is *tsiï*, that is *ching*, the 22nd mansion, 8 stars in Gemini; the Turkish equivalent is **tïrgek yulduz**. In the sixth line the Chinese name, which must be *kuei su*, the 23rd mansion mentioned above, is missing; the Turkish equivalent is **yaldraq yu[l]d[uz]**. Three of the Turkish names are known from other sources; and the document, with its fairly close locations, is of major importance.

No. 4. With the Khāqānī texts we get onto firmer ground, but there is a profound difference between our two authorities. KĀŠĞARĪ's purpose was to compile as complete a dictionary of Khāqānī as possible with some references to other

Turkish languages with which he was acquainted. We must therefore assume that he put into it all the astronomical terms that he knew, with the closest equivalents that he could find in Arabic, probably without any great technical knowledge of astronomy. The *KB* on the other hand is a Moslem didactic work; it is written in Khāqānī, but its author was a scholar steeped in Arabic learning and belles lettres and anxious to introduce his compatriots to this new intellectual world to which they had no previous access: many of the subjects dealt with, therefore, are not native Turkish, and we can safely assume that when he was dealing with technical matters like astronomical terms, if he did not know the exact Turkish equivalent, or if there was not one, he simply translated the ordinary (as opposed to the technical) meaning of the Arabic term which he wished to represent.

The most important entry in *Kaš.* is the translation of **yulduz** in III 40, *al-kawkab ism ǧāmiʿ*; *ṯumma yufarraq baynahumā fa-yuqāl li'l-muštarī* **eren tïl:z**; **qara: quš** *huwa'l-mīzān mina'l-nuǧūm*; **tïlker** *al-ṯurayyā*; **yeti:ge:n** *banāt naʿš*; **temür qazuq** *al-quṭb fi'l-falak*; **baqïr soqïm** *al-mirrīḫ*. There are two corruptions in the text; *baynahumā* 'between the two of them' must be an error for *baynahum* 'between them', unless we are to infer that 'between planets and fixed stars' is meant, and the translations of **eren tïl:z** and **qara: quš** must have been inverted. The text must originally have meant: – **yulduz** 'star', a generic term; (some) of them have specific names; Jupiter is **kara: kuš**; **eren tïl:z** is Libra; **tïlker** the Pleiades; **yeti:ge:n** Ursa Major; **temür qazuq** the Pole Star and **baqïr soqïm** Mars.

There are other references, which will be quoted later, to all the star names listed above, but I have not found any additional ones in *Kaš.*

The relevant passages in the *KB* listed above can be translated literally as follows, with some bewildering changes of tense.

(i) Chapter V. The seven stars (i. e. planets) and the twelve signs of the zodiac (*burūǰ*, literally "castles", the Arabic technical term).

124. I have begun my discourse with the name of God, my Lord who creates, nurtures and pardons. 125. He created the whole world as He wished, and made the sun (**kün**) and moon (**ay**) to shine on the world. 126. He created the firmament (**evren**) which constantly revolves and therewith unrolls its scroll. 127. He created the blue sky (**kök**) and the stars (**yulduz**) thereon; He created the dark night and the bright day. 128. Of these stars in the sky some are ornaments, some guides and some vanguards. 129. Some have been made bright for the peoples; some are guides if a man loses his way. 130. Some rise and some decline, some wax and some wane. 131. The highest is Saturn (**sekentir**[?]), it moves but stays for two years and eight months in a single house (**ev**, translating Arabic *bayt* which means both 'house' and 'constellation'). 132. After it Jupiter (**oŋay**) comes second; it stays twelve months in one house. 133. Third Mars (**körüd** [?]) threw out its chest (**kerdi** [MSS. in error *keldi*] **kögsün**), it moves and any green thing that it looks at dries up. 143. The sun (**yašïk**) was fourth, it illuminated the world, if you approach and exchange looks with it it illuminates you. 135. Fifth Venus (**sevit**) placed her lovely (**sevüg**) face (in the sky); if you have looked lovingly (**seve**) at her, enjoy yourself. 136. Then came Mercury (**arzu**), it grants wishes (**tilek arzular**); whomever it approaches joins himself to it. 137. Lowest of these moves the moon (**yalčïq**), when it looks square-

ly at the sun it is full. 138. Apart from these there are the twelve signs of the zodiac (here **ülkek**, not **burğ**); some have two houses (ev), some are one in breadth. 139. **quzï**: (Aries) is the spring star; then **uğ** (Taurus) and **eren tïlz** (Gemini); **qučïq** (Cancer) comes piercing. 140. See (**kör**) **arslan** (Leo), neighbour to **buγday baš**ï (Virgo), then **ülgü** (Libra) and **čaγan** (Scorpio) the companion of **ya** (Sagittarius). 141. Then comes **oγlaq** (Capricornus), **könek** (Aquarius) and **balïq** (Pisces); when these rise, the air (**qalïq**) is bright. 142. Three are spring, three summer, three autumn and three winter stars (**yulduz**). 143. Three of them were fire, three water, three air (**yél**, literally 'wind') and three earth; the world became an organized realm (**él**). 144. These (stars) were hostile to one another; enemy sent (an army ?) against enemy and cut off its rays. 145. Enemies which did not encounter one another became reconciled, and enemies which did not see one another put an end to mutual malice. 146. My God who arranges (all things) Himself arranged (these), He arranged them, set them in order and reconciled them.

(ii) Chapter IV, (a description of spring) verse 66. "(In spring) the sun (**yašïq**) will have returned again to its place, from the tail of **balïq** (Pisces) to the nose of **quzï** (Aries)."

(iii) Ögdülmiš's sleepless nights.

a) Chapter LXVII 4888. "He slept a little and then woke again. **Baqïr soqun** (*sic*; Mars) was declining from the zenith (**töpü**) 4889. Again he saw that **ülker** (the Pleiades) was lowering its head and **čaγan** (Scorpio) rising in the east ... 4892. The air (**qalïq**) was dark and seemed to be sprayed with perfume; then the light of dawn (**sata**) rose from the earth. 4893. The sun (**yašïq**) came up and its dust rose from the ground; in front of it its nine scarlet standards began to approach. 4894. Ögdülmiš got up, washed and said his prayers. 4895. The shield of the light of dawn (**sata**) looked redly from the earth; he rose, went to the palace and entered immediately.

b) Chapter LXXIII. 5673. "He called for his bed, lay down, slept for a long time and woke in a fright feeling lonely. 5674. He could not close his eyes again and lay awake thinking; his soul was weary. 5675. He looked out and saw **qara quš** (Jupiter) rising in the east; it came up freeing itself from the earth. 5676. Then **yïldïq** shone with **aqγïr**, **eren tïlz** followed in succession showing itself. 5677. An early bird rose climbing the sky, it chattered unintelligibly to itself, as if it was singing a Hebrew psalm. 5678. He lifted his head, looked eastwards and saw the sun (**yašïq**) rising out of the earth. 5679. The light of dawn (**sata**) branched upward from the earth, the complexion of the air became like a flame of fire.

c) Chapter LXXXI. 6210. Ögdülmiš ate and drank and rested a little; he stood up and said his prayers. 6211. The sun (**yašïq**) sank to the ground and hid its face; the air (**qalïq**) came to meet it and followed in its tracks. 6212. He called for his bed and lay down but could not sleep; because of his worries and anxiety he could not close his eyes. 6213. He got up and went out into the forecourt, his eyes filled with tears; the complexion of the world became the colour of an Ethiopian's (*ḥabaš*) face. 6214. He went back into the house and got into bed, he lay down a little suffering from anxiety. 6215. The Greek girl hid her face in the ground, and the complexion of the world became like a negro's (*zangi*) face. 6216. He could not sleep, stood up and looked out again; **ülker** (the Pleiades) was declining and the night was approaching its end.

6217. He raised his eyes to the sky (**kök**) and stood a long time looking out, the black night was dark and there was no light. 6218. He went and lay down and slept a little; then rose and looked up at the blue sky (**kök**). 6219. **Qara quš** (Jupiter) rose in the east and made its light flash like an enemy's fire signals. 6220. **Yetigen** (Ursa Major) raised its head again; **yïldïq** and **aqγïr** lowered theirs. 6221. The head of **eren tïlz** sank near the earth; the sun (**yašïq**) raised its head, and its face disclosed its light".

It should be noted that the text is in some disorder at this point; the order of verses shown above is that of the two best manuscripts; the order in the Vienna manuscript is 6210–1, 6215, 6212–3, 6217, 6214, 6216, 6218–21, and this seems much more logical.

No. 5. The passage in Rabghūzī will be found on fol. 66v. of the B. M. MS. in the story of Joseph, just after the statement that the Prophet Jacob had six wives and each of these wives two sons, and can be translated as follows:

"Elegant conceit (*Laṭīfa*). In the heavens there are twelve signs of the zodiac (**burūğ**). (Koranic quotation) "The heavens have twelve *burūğ*." These are **quzï** (Aries), **uy** (Taurus), **erendiz** (spelt *erendend*, *nūn* for *yā*, *dāl* for *zā*; Gemini), **qučïq** (Cancer), **kör arslan** (see! Leo), **buγday baš**ï (Virgo), **ülgü** (Libra), **čïγan** (Scorpio), **yay** (Sagittarius), **oγlaq** (Capricornus), **könek** (Aquarius) and **balïq** (Pisces). Seven planets (**yulduz**) move through these signs of the zodiac (**burūğ**). (Koranic quotation) "Do not swear by the stars and planets." If someone says "Which are those planets?", reply "**sekender** (*sic*, Saturn), **oγay** (Jupiter), **körüd** (?; Mars), **yašïq** (the sun), **sevit** (spelt *saqīt*, Venus), **arzu** (Mercury) and **yalčïq** (the moon). These stars constantly move without staying in one place.

Poem. We have made twelve signs of the zodiac (**ülkek**, not **burğ**) and seven companions (**aqrān**). First **quzï**, **uy**, **erendiz** (*erendend*), **qučïq** (spelt *qarčïq*), **kör arslan** and **buγday baš**ï; there are **ülgü**, **čïγan** and **yay**, **oγlaq**, **könek** and **balïq**. And seven stars (**yulduz**) move along the routes; they are **sekendiz** (so spelt), **oγay**, **körüd** (?), **yašïq**, **sevit** (*saqīt*), **arzu**, and **yalčïq**; they move like enemies and do not weary of the battle, as they follow their courses.

Whereas in these twelve signs of the zodiac (**burğ**) seven stars rise (**tuγar**), in this world below from seven signs of the zodiac twelve stars have been born (**tuγdï**, same verb, different meaning). If you ask "What are the seven signs of the zodiac?", they are the Prophet Jacob and his six wives [names given]. If you ask "What are the twelve stars?", they are twelve sons [names given]."

This cannot be accepted as an independent authority; there are three clear proofs that it is merely a paraphrase of Chapter V of the *KB*, which Rabghūzī must have had in front of him when he wrote it. The first is that he used his original so carelessly that when he came to Leo he incorporated the imperative "see!" in the name; the second is the clumsy transition from **burğ** (in the title of Chapter V) in the preamble to **ülkek** (in verse 138) in the poem for "sign of the zodiac"; the third is the odd and irrelevant last verse of the poem, which merely reproduces the substance of *KB* verse 144.

No. 6. *Ibn Muḥannā*, Chapter 21 of the Turkish vocabulary.

"Sky" **gö:k** (so spelt); "firmament" (*al-falak*) **evre:n** (misspelt **evze:n**); "sign of the zodiac" (*burğ*) **ü:ge:k** (so spelt); "star" **yulduz**; Milky Way (*al-maǧarra*) **gö:k yo:lï:**; "east" **kü:n duγdï:**, "west" **kü:n batγu:nï:**

"The signs of the zodiac"

qu:zï:	**tara:zu:**
öküz	**čaya:n**
qo:z	**ya:**
leŋeč	**oγla:q**
arslan	**könek**
buγda:y başï :	**balïq.**

(Other stars) *al-ṭurayyā* (Pleiades) **ü:lker**; *al-quṭb* (Pole Star) **temür qa:zuq**; *banāt na'š* (Ursa Major) **tegiz** (*corrupt*) **yetige:n**; *al-farqadān* (*beta* and *gamma* in Ursa Minor) **aq ayγïr**; *kawkabu'l-ṣubḥ* (the Morning Star, Venus) **ögolpan** (and words for natural phenomena like "rain").

It will be noticed that the list of signs of the zodiac is a translation of the Arabic names independent from that of *KB*, with a Persian loan word for Libra and different Turkish words for Taurus and Cancer, the latter a secondary form of **yeŋeč**, a more ordinary word for "crab" than **qučlq** which is peculiar to *KB* (and *Rabghūzī*). **qo:z** for Gemini is not a Turkish word at all; when it occurs in Turkish (from the 14th Century onwards) meaning "nut" it is a corruption of the Arabic word *ǧawz* 'nut'; in this context it seems to be a corruption of the Arabic word *ǧawza* 'Gemini'.

No. 7. The Arabic-Kipchak vocabularies.

(i) *Houtsma*, Chapter I.

'Sky' **kök** . . . 'sun' **kün** . . . 'moon' **ay** . . . 'star' **yulduz**; *al-ṭurayyā* **ülker** (and words for natural phenomena).

(ii) *Bulġat*, Chapter I.

. . . 'sky' **kök**; 'sun' **kün** . . . 'moon' **ay** . . . 'star' **yulduz**; *al-ǧudayy* (Pole Star) **temür qazuq**; *al-farqadān* **iki: boz at**; *banāt na'š* **yetigen** (misvocalized *yetgen*); *kawkabu'l-ṣubḥ* **colpan**; *al-maǧarra* **quš yolï:**; *al-ṭurayyā* **ülker**; *al-dabarān* (Aldebaran) **yaγïr sïγïn** (*sic*, see below); *al-haq'a* (three stars in Orion) **aruqta:q**; *aš-šï'rā'l-yamaniya* (Sirius) **aq ayγïr** (and words for natural phenomena).

(iii) *Qawānīn* Section V, Chapter I.

. . . 'sky' **kö:k** . . . 'star' **yulduz**; *al-ṭurayyā* **ya:dka:r** (this is a Persian word meaning "memento", in this context it is probably no more than a corruption of **ülker**, or perhaps **ürker**); *al-ǧudayy* **temür χa:zuq** "so called because it is stable and does not sink below the horizon"; 'sun' **küneš** . . . 'moon' **ay**.

(iv-v) Entries in *Kitāb al-idrāk* and *Tuḥfat* will be quoted under the appropriate headings below. So will those in *Sanglakh*.

The classified information having thus been set out, the most convenient arrangement will be to start by assembling the information about the more general terms, "sky" etc., and the planets, and then to list in alphabetical order all the early Turkish astronomical terms that we have with the evidence for their meanings.

In the latter context it is important that we have some lists of fixed stars which are, or should be, in their correct uranographical order. (I disregard the planets mentioned in these lists since they are not evidential.) These are the list of some lunar mansions in *T II D 79* (see No. 3 above) **ülker**, (**bayr sayrn** ?), **erentïr**, (**quysuγ**), **tirgek**, **yaldraq**; and the lists of Ögdülmiš's nocturnal observations (see No. 4 above), a) **ülker** (setting), **čaġan**, **sata**, the rising sun, the

shield of **sata**; b) **yïldïrïq** (rising), **aḏγïr**, **eren tüz**, the rising sun, the shield of **sata**; c) setting sun, **ülker** (declining), **yetigen** (rising), **yïldïrïq**, **aḏγïr**, **eren tüz** (all declining), rising sun. These lists are consistent to the extent that **ülker** (the pleiades) always comes first, and that **yïldïrïq** precedes **aḏγïr**, there is perhaps some inconsistency regarding the relative positions of **eren tü:z** and **yïldïrïq-aḏγïr**. Except for one name, **eren tü:z**, the lists of the signs of the zodiac are of no evidential value for native Turkish terminology, since all the rest are merely the literal translations of the Arabic words used for the constellations concerned. Names of the signs of the zodiac will therefore not be included in the alphabetical list unless they can be traced in some authority besides *KB* (including *Rabghūzī*) and *Ibn Muhannā*.

THE SKY. The traditional term is **gö:k**, pronounced **kö:k** in those languages in which the old initial **g-** was devoiced. It seems to mean rather specifically 'the visible sky', as opposed to 'heaven' (**teŋri:**) with all its religious and mystical overtones, and 'firmament' discussed below. It was used from the earliest period and is still current in all Turkish languages except one or two North Eastern (South Siberian) ones which use secondary forms of **teŋri:** reborrowed from Mongolian, where **teŋgeri**, a loan word from Turkish, means 'the visible sky' as well as 'heaven'. In Uyghur **kök** was often used in the hendiadys **kök qalïq** which is practically synonymous. **qalïq**, a deverbal noun from **qalï:-** 'to rise in the air' not traceable after the 14th Century, properly meant 'the air, or atmosphere', and was used in such phrases as **qalïq qušlarï** 'birds of the air' (*'Atabat al-Haqā'iq* verse 459).

THE FIRMAMENT clearly had no fixed name in Turkish terminology, but one or two words with other literal meanings were also used in this sense. In *Kaš.* I 421 **čïγrï:** (a word not found in any other authority) is translated *al-falak*, in general, and *falaku't-ṭāḥūn* 'the wheel of a mill' in particular, and also 'any wheel, spool or pulley', but in the phrase **kö:k čïγrï:sï:** *falaku's-samā*, 'the firmament'. In *KB* the word used for 'firmament' is **evren**, which occurs in this sense in verses 92, 119, 126, 344, 1642 etc. and is also quoted in *Ibn Muhannā*; but in *Kaš.* I 109 **evren** is translated 'a thing built in the shape of an iron-smelter's furnace used for baking', that is a domeshaped structure, a very appropriate word to use metaphorically for 'the firmament'. It does not however seem to have been used in this sense later than the 14th Century. Most modern languages use the Arabic loan word *falak*.

THE SUN. The traditional term was **gün** > **kün**, which was used both for 'sun' and for 'day' from the earliest period for which we have evidence. It still survives in all modern languages for 'day' and in some also for 'sun'. In others its place has been taken in this meaning by such words as **quya:š** which originally meant 'the blazing rays of the sun' and **güneš** > **küneš** 'sunshine'. In *KB* **kün** is used for 'sun' in verse 125, but in the other passages translated above the word used is **yašïq**. This word, which seems to be peculiar to *KB* (and consequently *Rabghūzī*), etymologically means 'gleaming, shining', and was perhaps used only because it was metrically more convenient than **kün**, or perhaps more "poetical".

THE MOON. The traditional term was **a:y**, which was used both for "moon" and "month" from the earliest period for which we have evidence, and is still so used in all modern languages. It is the word used in *KB* verse 125, but else-

where in *KB* (and consequently *Rabghūzī*) the word used is **yalčïq**. This is an exact parallel to **yašïq**, unknown elsewhere, and etymologically meaning "shining" or the like although its morphology is obscure.

STAR. The Türkü word **was yultuz**, which, in accordance with a well-known phonetic rule, became **yulduz** in later languages. In one form or another it is still the ordinary word for 'star' in all modern languages. In a few, as far apart as Tuvan (**ıldıs**) and Osmanli/Republican Turkish and Türkmen (**yıldız**) the vocalization has changed from -u- -u- to -ı- -ı-. This is all the more strange since in such early languages as Uyghur and Khāqānī there was a quite different word **yıldız** meaning 'the root of a tree'.

CONSTELLATION. There was no native Turkish word with this specific meaning; ev in *KB* verses 131 and 132 is merely a translation of the literal meaning of the Arabic term *bayt*.

PLANET. There was no native Turkish word with this specific meaning; **yulduz** meant both 'fixed star' and 'planet' (other than the sun and moon). In mediaeval and modern languages when a word more specific than yulduz was required the Arabic word *sayyāra* was used.

SIGN OF THE ZODIAC. This was not a native Turkish concept, and accordingly there was no native word with this specific meaning; **burğ** which was sometimes used in the mediaeval period and is still so used in a number of modern languages is of course an Arabic loan word. **Ükek** the word used in *KB* verse 138 (and *Rabghūzī*) and in *Ibn Muhannā* is merely a Turkish translation of **burğ**. In *Kaš*. I 78 it is translated coffin, chest; a tower (**burğ**) in a city wall built for defensive purposes'. The only modern forms which I have been able to find are Tuvan **ügek** 'a small confined space like a dog-kennel or sentry box' and Kirghiz **ükök** 'a small box for carrying food'. There may of course be others.

THE MILKY WAY. This is obviously one of the celestial phenomena which the Turks must have observed at a very early period, but they never devised a specific name for it. In *Ibn Muhannā* it is called **gö:k yo:lï:** 'the road in the sky' and in *Bulġat* **quš yolï:** 'the birds' road'. Modern languages use similar phrases of which the commonest is **saman yolï** 'the straw road'; the Arabic word *maǧarra* does not seem to have been used in any language except 'high' Osmanli.

THE PLANETS. SATURN. So far as modern languages are concerned we are confronted with the difficulty, in this and other similar cases, that most dictionaries do not contain such abstruse words as the names of planets, but at any rate in Uzbek (**zuhal**) and Osmanli/Republican Turkish (**zuhal**) an Arabic loan word is used. It is in fact doubtful whether the early Turks had their own name for Saturn since the word used in *KB* verse 131 (and *Rabghūzī*) looks foreign, although no foreign parallel has so far been suggested. Its spelling is uncertain. The Fergana MS. has **seke:ntir** (or **sege:ntir**); the Vienna MS. has **-z** instead of **-r**; the Cairo MS. is defective at this point. The B. M. MS. of *Rabghūzī* is neutral, having **-r** in one place and **-z** in the other. In either event it is too unlike the Sanskrit word *sanaiścara*, which appears in some of the texts in *TT VII* as **sanïčar**, to be regarded as a corruption of that word.

JUPITER. Rather disconcertingly there are two ancient names for this planet. In *KB* verse 132 (and consequently *Rabghūzī*) the word used is **oŋay**, and this name survives in two modern authorities. In 20th Century Anatolian

we have **öngay** (*sic*!), „Söz Derleme Dergisi", (hereafter called *SDD*), Vol. III, Istanbul 1942, p. 1111, and in ŠAYKH SŪLEYMĀN EFF. BUKHĀRĪ, *Luġat-i Čayatay ve Turkī 'Oṯmanī*, (Istanbul, AH. 1298 = A. D. 1882), p. 42 **oŋay** is translated not only 'easy, cheap', the normal meanings, but also 'Jupiter'. I have not been able to trace the origin of this entry; the word does not occur except in its ordinary meaning in *Sanglakh* or any other Čaghatay authority or in BUDAGOV. Misprints and other errors of every kind, even mistranslations of the French translations of Turkish words in PAVET DE COURTEILLE'S „Dictionnaire Turc-Oriental", are common in this book, but is it most unusual to find a veridical entry for which no origin can be found. It is commonly assumed that they came from some oral informant, which perhaps links this entry with the Anatolian word. The second name **qara: quš**, literally 'black bird', also appears in *KB* verses 5375 and 6219, but we are indebted to *Kaš*. for its meaning. Apart from its mention under **yulduz** in III 40 (see above) where it is given the wrong meaning in our MS., it appears in I 331, under **quš**, where it is stated that **qara: quš** means (1) *al-'uqab*, a bird, probably here 'the golden eagle' (the meaning it has in *KB* verse 3949); (2) *al-muštarī mina' l-nuǧūm* 'the star Jupiter' in the phrase **qara: quš tuγdï:** 'Jupiter has risen, which it does at dawn in their country (*'inda l-ṣubḥ 'indahum*)'; the same two meanings are given in slightly different words in III 221 under **qara: qara quš** meaning some kind of eagle (translations vary) exists in several modern languages, but I have not found any other case of its meaning 'Jupiter'. Uzbek and Osmanli/Republican Turkish use the Arabic word *muštarī* in this sense.

MARS. Here again two ancient names are known. In *KB* verse 133 (and consequently *Rabghūzī*) it is called **körüd** (or **kürüd** ?); there is no other trace of this word and, like the name for Saturn, it looks foreign; Khāqānī did not tolerate a final **-d** in Turkish words, converting fo rexample **a:d** 'name' to **a:t**. The second name is **baqïr sokum** (or **soqïm**, spellings vary) in *Kaš*. and **baqïr sokun** in *KB* verse 4888. In *Kaš*. it is mentioned in III 40 under **yulduz** and appears as a main entry in I 361, **baqïr soqum** 'the name of Mars; its redness is compared to it (i. e. **baqïr** 'copper')'. In I 397 **soqïm** is translated "the name of a piece of wood which is hollowed out, cut into a conical shape, pierced with three holes and mounted on an arrow; it is a whistle (*aṣ-ṣufārī*); hence the star Mars is called **baqïr soqïm**". I have found no other occurence of this phrase. In 20th Century Anatolian (*SDD* 1464) **yaldïrïq** is translated 'Mars', see **yaldraq** below. Uzbek, Osmanli/Republican Turkish used the Arabic word *mirrīḫ* in this sense.

VENUS. As the Morning Star Venus attracted more attention than all the other planets put together. Here again two ancient names are known. **Sevit**, a deverbal noun from **sev** – 'to love', occurs only in *KB* verse 135 (and *Rabghūzī*) and it is obvious from the puns in that verse that the author was well aware of its literal meaning. The connection between Venus and love seems to be a completely non-Turkish concept, and it is probably that **sevit** was invented by someone who was aware of this foreign concept, perhaps even the author himself, and never commanded any wide acceptance. This is not surprising in view of the wide use of the other ancient word **čolpan**. The earliest occurrence which I have traced is in *Ibn Muhannā*; the occurrence in the Chinese-Uyghur dictionary of the second half of the 14th Century quoted in RADLOFF'S „Wörterbuch" (III 2025) probably rests on some other earlier authority but the word

must be a good deal older than that. It also occurs in three Arabic-Kipchak vocabularies, *Bulġat* (quoted above), *Kitāb al-idrāk* 45, where it is translated *al-zuhrā* 'Venus', and *Tuḥfat* 30 b. 3 where, however, it is described as the Türkmen meaning of *kawkab* 'star' (the Kipchak meaning being **arïqtaq**). It also occurs in *Sanglakh* 214. v. 18 and in one form or another survives in most modern languages including Türki (Neo-Uyghur), Kazakh, Kirghiz, Uzbek, Karakalpak and Osmanli/Republican Turkish. In the last it is sometimes corrupted to **čoban yïldïz** and taken to mean 'the shepherd's star'. Some languages use the Arabic word *zuhrā* as well as, or instead of, **čolpan**.

MERCURY. It is doubtful whether the early Turks recognized the existence of this planet. Osmanli/Republican Turkish uses the Arabic word *'uṭārid*. **Arzu** in *KB* verse 136 (and *Rabghūzī*) is the Persian word *arzū* "wish, desire" and the wording of that verse shows, that the author was well aware of that fact. The association between Mercury and the fulfilment of wishes is as non-Turkish a concept as that between Venus and love, and this cannot be accepted as a genuine Turkish name. It is significant that *arzū* is never used for 'Mercury' in Persian where the word used is *tïr*.

ALPHABETICAL LIST OF EARLY TURKISH ASTRONOMICAL TERMS

(in the alphabetical order advocated in my „Turkish and Mongolian Studies", Chapter IV).

(1) **Uġ** Taurus, the second sign of the zodiac in *KB* verse 139 (and *Rabghūzī*, but not in *Ibn Muhannā* where Taurus is **öküz**) is mentioned, in its later form **uγ**, in *Sanglakh* 214. v. 20, as meaning, inter alia, *burġ-i ṯawr*, but I have not found any other reference to either word in this meaning. I should add, though it is not really relevant, that **uġ**, and less often **öküz**, are used as one of the names in the Turkish twelve-year animal cycle.

(2) **Aġγïr** 'stallion' is used in *KB* verses 5076 and 6220 as the name of a star associated closely with **yïldïrïq** and less closely with **eren tïïz**. It is presumably an abbreviation of **aq aġγïr** (or **ayγïr**) 'white stallion' which occurs in later authorities, but the meanings of this phrase vary. In *Ibn Muhannā* it is used to translate *al-farqadān* (*beta* and *gamma* in Ursa Minor) but in *Bulġat*, and *Tuḥfat* 20a. 13, to translate Sirius, *alpha* in Canis Major. The contexts make the latter the more probable. In *Bulġat*, and *Tuḥfat* 27 b. 3, *al-farqadān* is translated **iki: boz at** 'the two grey horses', which is a much more reasonable name for a group of two stars. It is possible either that ibn Muhannā got muddled between 'horse' and 'stallion', or that some words have fallen out of the existing text between *al-farqadān* and **aq ayγïr**. (This is not known to have happened in *Ibn Muhannā*, but in *Tuḥfat* there are several places where it can be proved to have happened). Provisionally therefore we can identify **(aq) aġγïr** (or **ayγïr**) with Sirius and **iki: boz at** with *beta* and *gamma* of Ursa Minor.

(3) **Aq aġγïr (ayγïr)** see (2).

(4) **Oγlaq** Capricornus, the tenth sign of the zodiac in *KB* verse 141 (and *Rabghūzī*) and *Ibn Muhannā*, is mentioned in *Sanglakh* 76 v. 24 as meaning both 'a four month old lamb'and *burġ-i ġady*; I have not found any other occurrence of the word in this latter meaning.

(5) **Iki: boz at** see (2).

(6) **Öküz** see (1).

(7) **Ülgü** Libra, the seventh sign of the zodiac in *KB* verse 140 (and *Rabghūzī*, but not *Ibn Muhannā* where the Persian loan word *tarāzū* is used instead) is mentioned in *Sanglakh* 86 r. 16 as meaning both 'scales' and *burġ-i mïzān*. I have not found any other occurrence of the word in this latter meaning. See **eren tü:z**.

(8) **Ülker** the Pleiades is one of the commonest of these names. 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 *ṯurayyā*. Its earliest appearance is probably in *T II D 79* (see No. 3) where it corresponds to the 18th lunar mansion, which was the Pleiades. In *Kaš.* I 95 **ülker** is translated *'aṯ-ṯurayyā'*; and in warfare a detachment in ambush (*qayd*) is called **ülker čerig**; the army is split up into (separate) detachments (*kalība*) which are sent out in every direction, and when one detachment withdraws (in the face of the enemy) the others follow it, and by this device (the enemy) is often routed'. 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. It occurs in *KB* verses 4889 and 6216, and is used to translate *aṯ-ṯurayyā* in Ibn Muhannā and all the Arabic-Kipchak vocabularies except *Qawānīn*. The earliest trace that I have found of **ürker** is in *Sanglakh* 71 r. 19, where it is translated 'the Pleiades'.

(9) **Oŋay** 'Jupiter'.

(10) **Aruq taq** (?) Neither the spelling nor the exact identity of this star is certain, but it must have been a conspicuous one since in *Tuḥfat* 30 b. 3 it is given as the Kipchak meaning of *kawkab* 'star', parallel to Türkmen **čolpan**. It is no doubt, like **eren tü:z**, two words but its etymological meaning is obscure. The earliest authorities on it are the Arabic-Kipchak vocabularies, which are prima facie inconsistent. In *Kitāb al-idrāk* 11 **ïrkïta:k** (*sic*) is translated 'the star called *al-ǧabbār*, Orion'; in *Bulġat al-haq'a*, 'three stars in the head of Orion' is translated **aruqta:q** and in *Tuḥfat* **arïqtaq** is used to translate not only *kawkab* in 30 b. 3 but also *ǧawzā* 'Gemini' in 11 a 8. The only other trace which I have found of this phrase is in the „Luġat-i Čaγatay ve Türkī 'Otmanī" p. 9 where **arqudaq** is translated "twin, two twins (or perhaps Gemini), a pair". This is another of the rare apparently veridical entries in this work of which the origin cannot be found. Orion and Gemini are adjacent constellations and the brightest star in the head of Orion, and the nearest to Gemini is Betelgeuse, *alpha* in Orion. It is probable therefore that **aruq taq** should be identified with that star, but see **eren tü:z**.

(11) **Eren tü:z**. The exact identity of this star is uncertain, and the spelling erratic. In *Kaš.* I. 76, in a chapter devoted to dissyllables, which shows that *Kaš.* regarded it as a phrase of two words **eren tü:z** is entered immediately before **eren** 'men' and translated 'the name of *al-mïzān* (Libra) among the stars; it is one of the lunar mansions (*manāzilu'l-qamar*)'. This is, so far as I know, the only occurrence of this phrase in *Kaš.* The same information is given in the translation of **yulduz**, if it is emended as suggested above. It is in fact the case that the third lunar mansion is *iota* and *gamma* of Libra, which is the seventh sign of the zodiac. The phrase also occurs in *KB*; in verse 139 (and *Rabghūzī*) it appears as the third sign of the zodiac, Gemini, not the seventh;

in verse 5676 **eren tü:z** is mentioned as following **yıldrıq** and **aǧyïr** and in 6221, also after those two stars. The phrase is spelt **erentïr** in Arat's text (no doubt under the influence of *T II G 79*) but this is an error. The spellings in the manuscripts are inconsistent and can be tabulated as follows: –

verse	Fergana MS.	Cairo MS.	Vienna MS.
139	**e:re:n di:z**	lacking	**eren tez**
5676	**ere:n ti:z**	**ere:n ti:r**	**(oti teg)**
6221	**ere:n ti:z**	**ere:n qï:r** (*sic*)	**eren tez**

As almost as many dots are left out as are put in in the Cairo MS., it is clear that the author's spelling was **eren tiz**, which however is likely to be a corruption of **eren tü:z**, and this justifies us in assuming that the spelling in *T II D 79* is due to a faulty transcription of an original in Arabic script. In that text the word corresponds to *tsui*, the 20th lunar mansion, *lamda*, *phi*[1] and *phi*[2] in the head of Orion in the vicinity of the second and third signs of the zodiac. If we accept that there is no precise identity between Turkish star names and lunar mansions and signs of the zodiac, the information in *T II D 79* and the references in *KB* can reasonably be reconciled since clearly they relate to the same part of the sky, but they cannot be reconciled with *Kaš.*'s translation, since the second/third signs and seventh sign of the zodiac are far apart. The explanation is perhaps that *Kaš.* did not really know which star was meant and took the etymological meaning 'men equal or level' to refer to a pair of scales with its pans level. The location of **eren tü:z** in the area of the second and third signs of the zodiac is consistent with its following **aǧyïr** if that is Sirius, and we are led to the slightly disconcerting conclusion that it too must be Betelgeuse, or, if "men level" is to be taken as implying a constellation rather than a single star, *alpha* and another of the brighter stars in Orion. The difficulty is not as great as at first appears, **eren tü:z** and **aruq taq** were used in different centuries and different areas, and there are other cases of different words being used for the same thing in Khāqānī and Kipchak.

(12) **Arslan** Leo, the fifth sign of the zodiac in *KB* verse 140 (and, in a muddled form, in *Rabghūzī*) and also in *Ibn Muhannā*, appears in *Sanglakh* 37 r. 6 as **arsalan**, translated "lion (*asad*); also the name of one of the *burūǧ-i falaki*". I have not found any other example of **arslan** in this sense, but **eset** (*asad*) is so used in Osmanli/Republican Turkish.

(13) **Arzu** Mercury.

(14) **A:y** the moon.

(15) **Baqïr soqïm/sokum** Mars.

(Bayr sayrn see **yayïz sïyïn)**

(16) **Čaǧan** Scorpion, the eighth sign of the zodiac in *KB* verse 140 (and *Rabghūzī*) and 4889, and, in the later form **čayan**, in *Ibn Muhannā*, appears in *Sanglakh* 210 v. 14 as **čayan**, and 222 r. 13 as **čïyan**, both translated 'scorpion, also *burǧ-i 'aqrab*', with a quotation from Nawā'ī in the latter meaning. I have not found any other occurrences of the word in this meaning.

(17) **Čolpan** Venus.

(18) **Temür qazŋuq / qazuq** literally 'the iron peg' is a widely distributed phrase for the Pole Star. The variations in the second word merely represent differences of dialect and are not significant. The main entry in *Kaš.* is in III 183, **qazŋuq** 'a peg (*al-watad*); hence the Pole Star (*quṭbu's-samā*) is called **temür qazŋuq**,

that is 'iron peg (*mismār*) because the sky revolves on it'. The phrase also appears in III 40 under **yulduz as temür qazuq** *al-qutb fi'l-falak*. It appears in *ibn Muhannā* as **temür qa:zuq** and in four Arabic-Kipchak vocabularies, in *Bulǧat* as **temür qazuq**, in *Tuḥfat* as **temir qazuq**, in *Kitāb al-idrāk*, 40, as **temir qaziq** 'the star called *al-ǧudayy*, the Pole Star', and in *Qawānīn* 58, 7, as *al-ǧudayy* **temür χa:zuq** 'so called because it is stable and does not sink below the horizon'. The phrase appears twice in *Sanglakh*; 200 v. 15 **temür qazuq** 'an iron nail; also the name of the Pole Star (*ǧudayy*) so called because it is the pole (*quṭb*) and its movement is imperceptible'; 271 v. 15 **qazuq** (1) 'a large nail'; (2) 'the star of the north pole (*quṭb-i šimālī*), that is *ǧudayy*, also called **temür qazuq**'. It survives no doubt in several modern languages; for example *SDD* 437 has **dirqaziq** as a word used in 20th Century Anatolian at Konya.

(19) **Tirgek** appears in *T II D 79* as the Turkish equivalent of the 22nd lunar mansion, eight stars in Gemini. The brightest of these is Castor, *alpha* of Gemini, and may be the one concerned. The word means 'prop, support, column'; the form is intermediate between **tirgük**, the form used in Uyghur and Khāqānī, and **tirek/direk** the modern form. I have not found any other trace of this word as a star name.

(20) **qara: quš** Jupiter.

(21) **quzï:** Aries, the first sign of the zodiac in *KB* verses 66 and 139 (and *Rabghūzī*) and in *Ibn Muhannā*, is mentioned in *Sanglakh* 287 r. 28 as meaning both 'lamb' and *burǧ-i hamal*. I have not found any other occurrence of the word in the latter meaning.

(22) **Gök (kök)** 'sky'.

(23) **Gün (kün)** 'sun' (and 'day').

(24) **Körüd(?)** Mars.

(25) **Sevit** Venus.

(26) **Sata:** I include this word in the list not because it is a genuine Turkish astronomical term but because its true nature has not hitherto been realized. So far as I am aware it is peculiar to *KB*, where it occurs at least four times, in verses 4892, 4895 and 5679, which have been translated above, and in one other passage. When Ögdülmiš returned from his first visit to Oǧurmiš, he entered his house and went to bed; the sun set, the air became the colour of sable, the world rubbed the colour of charcoal on its face and he went to sleep. He woke again and raised his head. "3839. A flame branched out from the east like a fire and became bright like a bride disclosing her face for the first time. 3840 The shield of **sata:** rose and came up; the complexion of the world became a white jewel". Thus in two passages we have **sata:** by itself and in two 'the shield of **sata:**'. The spelling of the word varies. The Fergana MS. consistently spells it *s. ta*: unvocalized; the Cairo MS. spells it twice in this way, and twice *sata*: with a *fatḥa* on the *sin*; the Vienna MS. has **sata** in two places and **sïta** in the other two. Thus **sata:** is to be preferred to **sïta:**, which is the spelling adopted by Arat. Radloff in three passages translated it 'the sun', which is obviously wrong, and in the fourth merely transcribed it as *sada*(?). Arat translated **sata:** *mizraklar* 'lances', and **sata: qalqanï** as *mizraklar ile qalqan* 'lances and shield', which is grammatically impossible, since the phrase must mean 'the shield of **sata:**'. I do not know where he got this meaning, which I cannot find in any other authority. Taking the four occurrences together, the order of events seems to

be (1) the appearance of **sata:**, (2) the sunrise, and (3) the appearance of the shield of **sata:**. It seems clear that the word must have meant something like 'the light of dawn', and it is possible that **sata:** by itself meant 'the false dawn' and 'the shield of **sata:**' 'the true dawn'. That being so, there can hardly be any doubt that it is a corruption of the Arabic word *saṭi'* which *Redhouse*, 1058, translates 'the widespread light of dawn'. It must have been a popular, not a literary, word, since the phonetic changes involved could not have occurred in a literary context.

(27) **Sekentir** (?) Saturn.

(28) **Yeti:ge:n** Ursa Major, derived from **yeti:** 'seven' with reference to the seven major stars which make up this constellation. This is another common star name. Its earliest appearance is in the Buddhist 'Sūtra of the Seven Stars' a Turkish translation of which appears in *TT VII* No. 40; the Turkish title **yetigen sutur** is mentioned in line 135. It appears three times in *Kaš.*; in III 37 **yeti:ge:n** is translated *banāt na'š* and the same translation appears under **yulduz** in III 40 and in the translation of a verse in III 247, 24. It is mentioned in *KB* verse 6220. The word also appears in *Ibn Muhannā* and three Arabic-Kipchak vocabularies, *Kitab al-idrāk* 91, **yetegen** (sic!) *banāt na'š*; *Bulġat* 2, 13 *banāt na'š* **yetgen** (*sic*!); *Tuḥfat* 7a. 11 *banāt na'š* **yetiger** (sic!). The last is not a scribal error but a secondary form which is noted in Osmanli from the 14th Century onwards, see „Tanïklariyle Tarama Sözlügü", Istanbul, 1943 ff., I 808; II 1028; III 792; IV 865 and is still current in Republican Turkish. The word appears in *Sanglakh* 348 v. 19 **yetigen** 'the constellation of Ursa Major', in *Rūmi* (i. e Osmanli) called **yediler** and **yedi qardaš**. It survives in a number of modern languages, in the North East (Southern Siberia) as yettegen and the like (RADLOFF „Wörterbuch", III 165).

(29) **Yaγïz sïγïn**. In *Bulġat*: *al-dabarān*, Aldebaran, *alpha* in Taurus, is translated **yaγïr sïγïn**. The first word, meaning 'a saddle gall' is clearly corrupt and the obvious emendation is **yaγïz** 'brown'. **Sïγïn**, earlier **sïγun**, is a well known Turkish word occurring in Uyghur and in *KB* verses 79 and 5374 and translated in *Kaš.* I 409. It originally meant 'the (male) maral stag', but in districts where this particular animal was unknown it was used as a word for other kinds of stags, elk, reindeer and so on. 'Brown stag' is a reasonable kind of star name to set beside 'white stallion' and 'two grey horses'. Aldebaran is one of the stars in the 19th lunar mansion and the Turkish equivalent in *T II D 79*, which could be read as **bayr soγrn**, is probably a mistranscription otf his phrase, *yā* (read *bā*) *alif ġayn zā* (read *rā*) *sīn* (probably unvocalized, in which case *damma* substituted for *kasra*) *ġayn wāw* (read *rā*) *nūn*. Mistranscriptions of the same kind abound in the Vienna MS. of the *KB*.

(30) **Yalčïq** 'the moon'.

(31) **Yaldraq/yïldrïq**. The vocalization of this word and of the verb from which it is derived has always been erratic. In *T II D 79* the spelling is **yaldraq**, in *KB* the spelling in the MSS., when it is unequivocal, is **yïldrïq**. The verb 'to shine' is **yaldrï:-** in Uyghur and *Kaš.* III 437 (in one place **yaldra:-**) but in one Manichaean Uyghur text **yïldïra-**, and this form is the origin of such modern words as **yïldïrïm** 'lightning'. **Yaldrïq** (also vocalized **yaldruq**) is translated in *Kaš.* III 432 as 'shining' (for example of a polished brass basin) and 'smartly dressed' (of a woman). Thus as a star name it means, like **yašïq** and **yalčïq**,

'a shining object'. Apart from its appearance, meaning 'Mars', in 20th Century Anatolian (**yaldïrïq**, *SDD* 1, 464 from Bolu) it seems to occur as a star name only in *T II D 79* and *KB*. In the first it is used to represent the 23rd lunar mansion, that is several stars in Cancer, the fourth sign of the zodiac. Neither these, nor any other stars in Cancer are greater than the fourth magnitude and some other brighter star must be sought in the vicinity. In *KB* verses 5676 and 6220 it is mentioned in association with **ayγïr**, which seems to be Sirius, *alpha* in Canis Major; the brightest star near Cancer and between that constellation and Sirius is Procyon, *alpha* in Canis Minor, and that is probably the star meant.

(32) **Yulduz** 'star'.

(33) **Yašïq** 'the sun'.

This concludes the list of early Turkish astronomical terms which I have succeeded in locating. So far as the stars are concerned the result is extremely odd. We cannot find undoubtedly Turkish names for more than three planets, Jupiter, Mars and Venus, or for more than eight or nine fixed stars and constellations, certainly Ursa Major, *beta* and *gamma* in Ursa Minor, the Pole Star and the Pleiades, probably Aldebaran, Betelgeuse, Castor, Procyon and Sirius and these latter are all either grouped round the pole or situated in a segment of the sky which is not more than about one fifth of the whole. It can be argued that if the whole of *T II D 79* had survived we should have had much greater coverage, but this is not certain, we might merely find that the more remote mansions were represented by transcriptions of the Chinese names like **quysuy** in the part of the text which does survive.

Nor does a search in later authorities enlarge our repertoire. I had hoped that I might find some additional names in the extensive list of astronomical terms in the first Chapter of the great Manchu-Tibetan-Mongolian-Turkish (the Türki of Chinese Turkestan) – Chinese dictionary, „Han-i araha sunji hergen kalciha Manju gisun-i bulegu bithe" prepared under the orders of the Emperor Ch'ien-lung in the last quarter of the 18th Century and published in facsimile in Peking in 1957, but I was bitterly disappointed. There is on pages 22 ff. a list of the 28 lunar mansions in all five languages, but the Turkish line merely contains a faulty transcription of the Persian names. The Türki of this dictionary is saturated with Persian words; for example 'sun' is **aftāb**, although **kün** does occur in such phrases as 'the sun rose'. In addition the scholar responsible for putting in the Turkish lines was either grossly ignorant or grossly careless. For example the five planets, Jupiter, Mars, Saturn, Venus and Mercury appear in that order on pages 19 and 20. The Chinese line, which is the basis of the whole dictionary, contains the Chinese names (wood star, fire star etc.). The Manchu line contains transliterations or literal translations of these Chinese names. The Tibetan line contains the correct Tibetan names. The Mongolian line contains more or less faulty transliterations of the Sanskrit names, no doubt received through Turkish since the spellings are much the same as those in *TT VII* No. 4. The Turkish line has **Mirrïḫ** (Mars), **Muštari** (Jupiter), **Topraq** (a literal translation of the Chinese 'earth [star]'), **sondu** (which I cannot explain at all) and **qamar** (Persian [Arabic] *qamar* 'moon') in that order. Two other Chinese names for Venus are included in this Chapter: *t'ai pai* 'great white' on p. 21 translated **aq yulduz** 'white star', and *liang hsing* 'morning star' on p. 22 translated **čolpan**. Only very few of the other ancient names

survive, and they are mostly distorted, for example **ülker** appears on p. 30 as **hürger**, but unfortunately none of the corresponding names in the other lines are shown as star names in the relevant dictionaries.

Thus we are left with a repertoire of native Turkish star names giving a very restricted coverage of the firmament; perhaps some qualified astronomer will be able to suggest the reason.

Un Glossaire arabe-kiptchak retrouvé

(Note préliminaire)

Par ANANIASZ ZAJĄCZKOWSKI (Warszawa)

La littérature turcologique fait généralement état de six monuments arabes provenant de l'Etat Mamelouk sur le territoire d'Egypte et de Syrie, relatifs à l'enseignement pratique de la langue des Turcs (*at-turkī*). La liste de ces monuments, en commençant par le plus ancien de 1245 (*Tarǧumān turkī wa-'arabī*) pour terminer par le manuel assez tardif (1619 env.) *aš-Šuḏūr aḏ-ḏahabīya* (= ŠḎ) a été donnée par des auteurs de compendiums connus, dont BASKAKOV et d'autres, et par O. PRITSAK dans le compte rendu de mon Manuel arabe de la langue des Turcs et des Kiptchaks (époque de l'Etat Mamelouk): *Bulġat al-muštāq fi luġat at-turk wa-l qifǰāq*[1] (= BM).

Ces monuments, publiés pour la plupart au cours des trente dernières années (mais le premier monument, qui est en même temps le plus ancien, fut publié il y a exactement soixante-dix ans, en 1894, par le turcologue hollandais M. TH. HOUTSMA) sont une source importante pour la connaissance de la langue des Kiptchaks[2].

Me basant sur l'opinion que la liste des monuments est close, j'ai présenté dans le temps (1949), à la session de la Commission Orientaliste de l'Académie Polonaise des Sciences et des Lettres, un rapport sur la nécessité de la publication et d'un plan d'édition du «Glossaire kiptchak» (*Thesaurus Linguae Kipčacorum*)[3].

Cependant la locution «dies diem docet», s'est encore une fois révélée juste. Lors d'un court séjour en Italie, fait (septembre – octobre 1963) à l'occassion du II[e] Congrès International des Arts Turcs qui s'est réuni à Venise, j'ai eu l'occasion d'étudier les manuscrits orientaux de l'une des plus vieilles bibliothèques du monde, la Biblioteca Medicea Laurenziana de Florence. Parmi les nombreux lexiques arabes-turcs dont les manuscrits sont conservés dans cette biblio-

[1] Cf. O. PRITSAK, „Der Islam" t. 32, 3, 1956, p. 362–363. Cf. N. A. BASKAKOV, Tyurkskiye yazīki, Moscou 1960, p. 8–9 et 146, et Vvedeniye v izučeniye tyurkskikh yazīkov, Moscou 1962, p. 63–65.

[2] O. PRITSAK, l. c., p. 362: „„Eine wichtige Quelle zur Kenntnis des Kipčakischen bilden die sog. Mamlūkkipčakischen Denkmäler, die nachdem die einstigen gekauften Sklaven (*mamlūk*) aus Osteuropa und Nordkaukasus Herren über Ägypten und Syrien wurden, in diesen Ländern zum Zwecke einer besseren Verständigung mit denselben entstanden waren".

[3] Cf. A. ZAJĄCZKOWSKI, O potrzebie edycji i planie wydawniczym „Słownika Kipczackiego" (Thesaurus Linguae Kipčacorum), (Du besoin de l'édition et du plan de publication du „Glossaire Kiptchak"). Comptes rendus de l'Académie Polonaise des Sciences et des Lettres, Cracovie 1949, t. L, No. 10, p. 591–594. L'initiative a été très bien accueillie par les turcologues. Cf. O. PRITSAK, *Das Kiptschakische*, „Philologiae Turcicae Fundamenta", t. I, p. 74: „Es ist sehr zu begrüßen, daß in Warschau eine Arbeitsgemeinschaft unter der Leitung von Ananiasz Zajączkowski an einem einheitlichen Thesaurus Linguae Kipčakorum arbeitet".