Gurbani And Nanakshahi Calendar

(Pal Singh Purewal, Edmonton)

Guru Nanak Sahib had spent almost a quarter of a century travelling and spreading the word in the world. Since most of his travels were on foot, he must have spent countless summer nights in the lap of nature. He observed physical phenomena, and his *bani* portrays some of them. It is true that his aim was not to highlight the phenomena but to impart true knowledge using them as a vehicle, since people could relate to them. From amongst such phenomena mention may be made of the formation of day and night, the month - lunar and solar, the year, the movement of the luminaries - the sun, the moon, and the stars, formation of seasons, the twelve months of the year, the *tithi* (lunar day), and the division of the day by man into smaller units of time such as *pehar, muhurat, ghati,pal, visuaye, chasuaye,* and yugas - the mega units of time. These units are the basic building blocks of Hindu calendars. Mention of these is made in Guru Granth Sahib. In Tukhari Raga Guru Sahib records the appearance of a comet in the sky.
ਤਾਰਾ ਚੜਿਆ ਲੰਮਾ ਕਿਉ ਨਦਰਿ ਨਿਹਾਲਿਆ ਰਾਮ ॥ – ਪੰ: ੧੧੧੦

The Sun the moon and the stars

While the sun represents heat and excitation, the moon represents coolness, comfort and solace. The sun also is dispeller of darkness and represents enlightenment due to experience of true knowledge.

Sun's apparent motion in the sky causes the formation of day and night and of seasons in the year. In fact these are caused by the rotation of the earth on its axis and revolution around the sun, but since we see the sun moving we shall treat it as such for purposes of our discussion.

ਸੂਰਜੁ ਏਕੋ ਰੁਤਿ ਅਨੇਕ ॥ ਨਾਨਕ ਕਰਤੇ ਕੇ ਕੇਤੇ ਵੇਸ ॥ – ਪੰ: ੧੩

The sun is one, but many are the seasons - says Nanak, how many different ways the Creator manifests Himself!

ਦਿਨ ਰਵਿ ਚਲੈ ਨਿਸਿ ਸਸਿ ਚਲੈ ਤਾਰਿਕਾ ਲਖ ਪਲੋਇ ॥ ਮੁਕਾਮੁ ਓਹੀ ਏਕੁ ਹੈ ਨਾਨਕਾ ਸਚੁ ਬੁਗੋਇ ॥ – ਪੰ: ੬੪

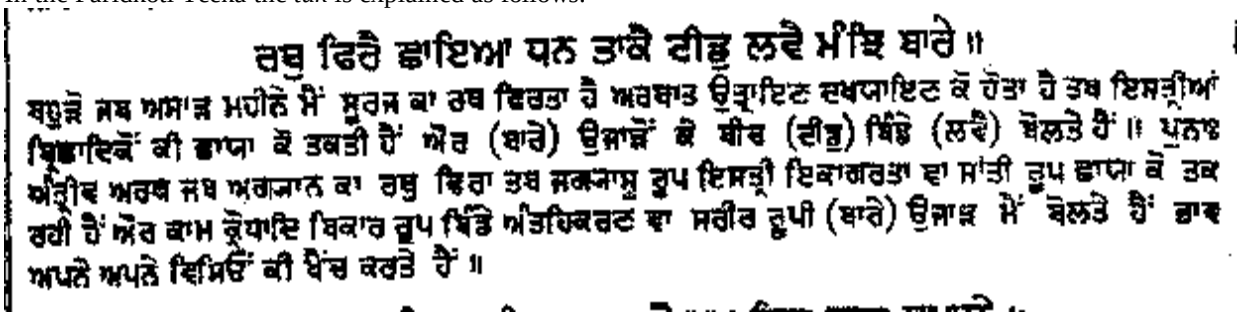
Nothing is permanent, the sun moves, the moon moves, the stars move, the constellations move, all are impermanent. Nanak says that the truth is that only Akal Purkh is permanent.

The motion of the sun that causes seasons is beautifully portrayed in the *shabd* for the month of Asadh in Tukahari raga Barahmaha. The *tuk* is :

ਰਥੁ ਫਿਰੈ ਛਾਇਆ ਧਨ ਤਾਕੈ ਟੀਡੁ ਲਵੈ ਮੰਝਿ ਬਾਰੇ ॥ – ਪੰ: ੧੧੦੮

The year length of the Nanakshahi calendar is based on this *tuk*.

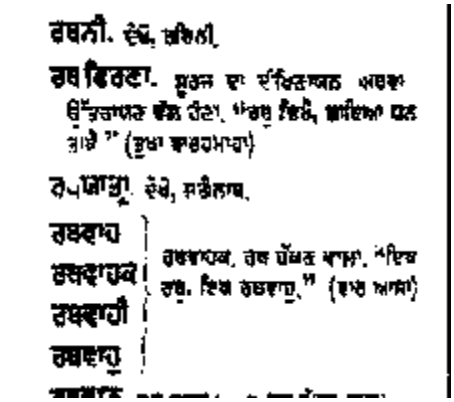
In the Faridkoti Teeka the *tuk* is explained as follows:



ਰਥੁ ਫਿਰੈ ਛਾਇਆ ਧਨ ਤਾਕੈ ਟੀਡੁ ਲਵੈ ਮੰਝਿ ਬਾਰੇ ॥

ਥਹੁੜੇ ਜਬ ਅਸਾੜ ਮਹੀਨੇ ਮੈਂ ਸੂਰਜ ਕਾ ਰਥ ਫਿਰਤਾ ਹੈ ਅਰਥਾਤ ਉਤ੍ਪਾਦਿਣ ਦਖਯਾਇਣ ਕੋ ਹੋਤਾ ਹੈ ਤਥ ਇਸਤ੍ਰੀਆਂ ਖ੍ਰਿਛਾਦਿਕੋਂ ਕੀ ਛਾਯਾ ਕੋ ਤਕਤੀ ਹੈਂ ਔਰ (ਬਾਰੇ) ਉਜਾੜੋਂ ਕੇ ਬੀਚ (ਟੀਡੁ) ਬਿੰਡੇ (ਲਵੈ) ਬੋਲਤੇ ਹੈਂ ॥ ਪੁਨਾਃ ਅੰਤ੍ਰੀਵ ਅਰਥ ਜਬ ਅਗ੍ਯਾਨ ਕਾ ਰਥੁ ਫਿਰਾ ਤਥ ਜਨਮਾਸ੍ਤ੍ ਰੂਪ ਇਸਤ੍ਰੀ ਵਿਕਾਰਤਾ ਵਾ ਸਾਂਤੀ ਰੂਪ ਛਾਯਾ ਕੋ ਤਕ ਰਹੀ ਹੈਂ ਔਰ ਕਾਮ ਕ੍ਰੋਧਾਦਿ ਵਿਕਾਰ ਰੂਪ ਬਿੰਡੇ ਅੰਤਹਿਕਰਣ ਵਾ ਸਰੀਰ ਰੂਪੀ (ਬਾਰੇ) ਉਜਾੜ ਮੈਂ ਬੋਲਤੇ ਹੈਂ ਭਾਵ ਅਪਨੇ ਅਪਨੇ ਵਿਸ਼ਿਓਂ ਕੀ ਖੈਂਚ ਕਰਤੇ ਹੈਂ ॥

The meanings of 'rath firai' as given in the Mahan Kosh p.1022 is given below:



ਰਥਨੀ. ਦੇਖ, ਸ਼ਕਤੀ।

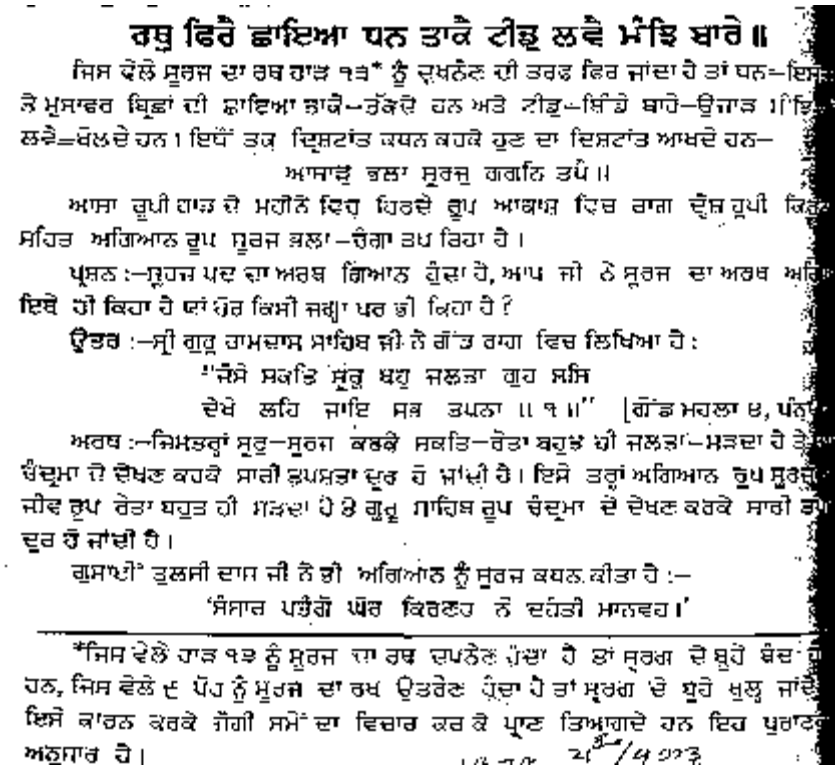
ਰਥ ਫਿਰਣਾ. ਸੂਰਜ ਦਾ ਦੱਖਿਣਾਯਨ ਅਤੇ ਉੱਤਰਾਯਨ ਵੱਲ ਹੋਣਾ. "ਰਥੁ ਫਿਰੈ, ਛਾਇਆ ਧਨ ਸ਼ਾਖੈ" (ਸੂਖਮਾ ਕਾਫੀਮਾਹਾ)

ਰਥਜਾਤ੍ਰਾ. ਦੇਖੋ, ਸ਼ਕੈਨਾਥ.

ਰਥਵਾਹ
ਰਥਵਾਹਕ
ਰਥਵਾਹੀ
ਰਥਵਾਹੁ

ਰਥਵਾਹਕ. ਰਥ ਚੱਲਣ ਵਾਲਾ. "ਇਕ ਰਥੁ, ਇਕ ਰਥਵਾਹੁ." (ਵਾਰ ਆਸਾ)

The Sampardaee Teeka by Sant Kirpal Singh (Amritsar) gives this meaning:



ਰਥੁ ਫਿਰੈ ਛਾਇਆ ਧਨ ਤਾਕੈ ਟੀਕੁ ਲਵੈ ਮੰਝਿ ਬਾਰੇ ॥

ਜਿਸ ਵੇਲੇ ਸੂਰਜ ਦਾ ਰਥ ਹਾੜ ੧੭* ਨੂੰ ਦੱਖਣੈਣ ਵੀ ਤਰਫ਼ ਫਿਰ ਜਾਂਦਾ ਹੈ ਤਾਂ ਧਨ–ਇਸਤ੍ਰੀ ਨੇ ਮੁਸਾਫਰ ਬ੍ਰਿਛਾਂ ਦੀ ਛਾਇਆ ਤਾਕੇ–ਤੱਕਦੀ ਹਨ ਅਤੇ ਟੀਕੁ–ਸ਼ਿੰਙੇ ਬਾਹੇ–ਉਜਾੜ ।ਵਿਚ ਲਵੈ–ਬੋਲਦੇ ਹਨ। ਇਥੋਂ ਤਕ ਦ੍ਰਿਸ਼ਟਾਂਤ ਕਥਨ ਕਹਕੇ ਹੁਣ ਦਾ ਦ੍ਰਿਸ਼ਟਾਂਤ ਆਖਦੇ ਹਨ–

ਆਸਾੜੁ ਭਲਾ ਸੂਰਜੁ ਗਗਨਿ ਤਪੈ ॥

ਆਸਾ ਰੂਪੀ ਹਾੜ ਦੇ ਮਹੀਨੇ ਵਿਚ ਹਿਰਦੇ ਰੂਪ ਆਕਾਸ਼ ਵਿਚ ਰਾਗ ਦੀਪਤ ਰੂਪੀ ਕਿਰਣਾਂ ਸਹਿਤ ਅਗਿਆਨ ਰੂਪ ਸੂਰਜ ਭਲਾ–ਚੰਗਾ ਤਪ ਰਿਹਾ ਹੈ।

ਪ੍ਰਸ਼ਨ :–ਸੂਹਜ ਪਦ ਦਾ ਅਰਥ ਗਿਆਨ ਹੁੰਦਾ ਹੈ, ਆਪ ਜੀ ਨੇ ਸੂਰਜ ਦਾ ਅਰਥ ਅਗਿ ਇਥੇ ਹੀ ਕਿਹਾ ਹੈ ਹਾਂ ਹੋਰ ਕਿਸੀ ਜਗ੍ਹਾ ਪਰ ਭੀ ਕਿਹਾ ਹੈ ?

ਉੱਤਰ :–ਸ੍ਰੀ ਗੁਰੂ ਰਾਮਦਾਸ ਸਾਹਿਬ ਜੀ ਨੇ ਗੌਂਡ ਰਾਗ ਵਿਚ ਲਿਖਿਆ ਹੈ :

"ਜੈਸੇ ਸਕਤਿ ਸੂਰੁ ਬਹੁ ਜਲੜਾ ਗੁਹ ਸਸਿ
ਦੇਖੇ ਲਹਿ ਜਾਇ ਸਭ ਤਪਨਾ ॥ ੧ ॥" [ਗੌਂਡ ਮਹਲਾ ੪, ਪੰਨਾ

ਅਰਥ :–ਜਿਸਤਰ੍ਹਾਂ ਸੂਰੁ–ਸੂਰਜ ਕਰਕੇ ਸਕਤਿ–ਰੇਤਾ ਬਹੁਤ ਹੀ ਜਲੜਾ–ਸੜਦਾ ਹੈ ਤੇ ਚੰਦ੍ਰਮਾ ਦੇ ਦੇਖਣ ਕਰਕੇ ਸਾਰੀ ਤਪਸ਼ੜਾ ਦੂਰ ਹੋ ਜਾਂਦੀ ਹੈ। ਇਸੇ ਤਰ੍ਹਾਂ ਅਗਿਆਨ ਰੂਪ ਸੂਰਜ ਜੀਵ ਰੂਪ ਰੇਤਾ ਬਹੁਤ ਹੀ ਸੜਦਾ ਹੈ ਪਰ ਗੁਰੂ ਸਾਹਿਬ ਰੂਪ ਚੰਦ੍ਰਮਾ ਦੇ ਦੇਖਣ ਕਰਕੇ ਸਾਰੀ ਤਪ ਦੂਰ ਹੋ ਜਾਂਦੀ ਹੈ।

ਗੁਸਾਈਂ ਤੁਲਸੀ ਦਾਸ ਜੀ ਨੇ ਭੀ ਅਗਿਆਨ ਨੂੰ ਸੂਰਜ ਕਥਨ ਕੀਤਾ ਹੈ :–

'ਸੰਸਾਰ ਪਤੰਗੋ ਘੋਰ ਕਿਰਣਹ ਨੇ ਦਹੰਤੀ ਮਾਨਵਹ।'

*ਜਿਸ ਵੇਲੇ ਹਾੜ ੧੭ ਨੂੰ ਸੂਰਜ ਦਾ ਰਥ ਦਖਨੈਣ ਹੁੰਦਾ ਹੈ ਤਾਂ ਸੁਰਗ ਦੇ ਬ੍ਰਹੋ ਬੰਦ ਹੁੰਦੇ ਹਨ, ਜਿਸ ਵੇਲੇ ੯ ਪੋਹ ਨੂੰ ਸੂਰਜ ਦਾ ਰਥ ਉਤਰੈਣ ਹੁੰਦਾ ਹੈ ਤਾਂ ਸੁਰਗ ਦੇ ਬੂਹੇ ਖੁਲ੍ਹ ਜਾਂਦੇ ਹਨ, ਇਸੇ ਕਾਰਨ ਕਰਕੇ ਜੋਗੀ ਸਮੇਂ ਦਾ ਵਿਚਾਰ ਕਰ ਕੇ ਪ੍ਰਾਣ ਤਿਆਗਦੇ ਹਨ ਇਹ ਪੁਰਾਣਕ ਅਨੁਸਾਰ ਹੈ।

We shall here discuss this *tuk* in detail and its implication for the Nanakshahi Calendar. The word ਤਾਕੈ in this line can be translated in two ways: (i) watches, and (ii) looks for. The word ਫਿਰੈ has also two connotations (i) turns or changes course[1], (ii) moves in its daily course. Prof Sahib Singh has used the second meaning in each case. However, we shall use the first meaning in both cases and show how this interpretation represents a seasonal phenomenon and its spiritual significance.

On the spring equinox day in March the day and night are equal in length. The sun rises exactly in the east. With the passage of each day every morning it rises a little to the north of east The distance in degrees between the rising point and the east is known as amplitude. The amplitude increases day by day to a maximum value for a given place as the sun reaches its greatest northern declination during its northern journey (ਉਤ੍ਰਾਇਣ) on the summer solstice day in June

[1] ਧੁਰਿ ਲਿਖਿਆ ਪਰਵਾਣਾ ਫਿਰੈ ਨਾਹੀ ਗੁਰੁ ਜਾਇ ਹਰਿ ਪ੍ਰਭ ਪਾਸਿ ਜੀਉ ॥ – ਪੰ:੯੨੩ (ਫਿਰੈ ਨਾਹੀ – ਮੋੜਿਆ ਨਹੀਂ ਜਾ ਸਕਦਾ)

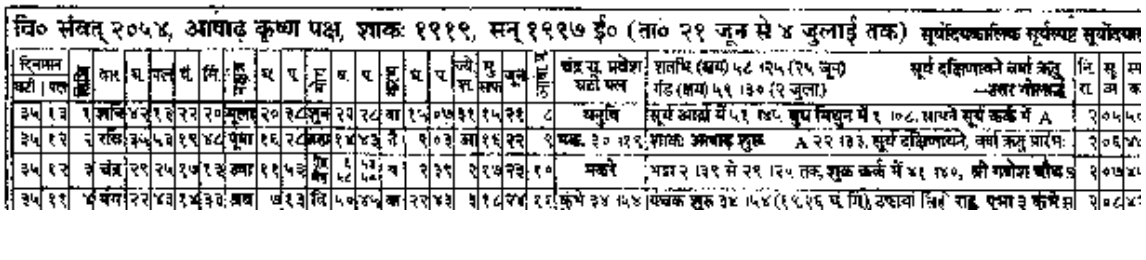
(June 20 or 21). The value of the amplitude depends on the latitude of the place and declination (how far away is the sun from the celestial equator) of the sun. The chariot of the sun turns back (ਰਥੁ ਫਿਰੈ), changes its course from northerly to southerly direction (ਦਖਸ਼ਨਾਇਣ)[2], and on September 22 or 23 - the day of autumn equinox , it rises exactly in the east again. It continues on its southward journey until the day of the winter solstice on December 22 or 23. It then changes direction and starts on the northward journey when again it rises exactly in the east on the day of the spring equinox in March. The northward and the southward journeys are known as *uttrayana* and *dakshnayna* respectively. (Please refer to the diagram on page 13.)

The above mentioned phenomena can be observed by fixing a vertical pole in level ground, and watching its shadow every day at apparent noon, when its shadow is shortest for that day. As the sun moves in it northerly journey it will be higher and higher in the sky at noon and the shadow of the pole will be shorter each day at noon than the shadow on the previous day. The shadow will be shortest on the longest day in June when the chariot turns (ਰਥੁ ਫਿਰੈ). The shadow will now start increasing day by day until it is longest on the shortest day in December[3] . So, when the *rath firai* occurs in June the shadow will be longer next day. This is what the *jiv istri* is watching (ਤਾਕੈ)- watching the shadow to know when the chariot turns. But, how is this knowledge important to her?

Around c.532 CE the *rath firai* signified the end of the month of Harh and the beginning of the month of Sawan - **the start of the rainy season**. The *jiv istri* is watching the shadow and waiting in anticipation for the chariot of the sun to turn so that her scorched mind (with lust, anger, greed, attachment, and inflated ego) may receive the *amrita* rain in Sawan (of Guru's Grace). ਸਾਵਣਿ ਸਰਸ ਮਨਾ ਘਣ ਵਰਸਹਿ ਰੁਤਿ ਆਏ ॥ ਪੰ: – ੧੧੦੮. The second half of the *tuk* "ਟੀਡੁ ਲਵੈ ਮੰਝਿ ਬਾਰੇ" also points to the rainy season. After the first rains the crickets come out of the eggs and start chirping. Similarly, the happy and the blessed *jiv istri* sings the praises of the Akal Purkh after having conquered the Harh of *antishkarn*.

Now, what significance does this *tuk* have for Nanakshahi calendar? In the times of Guru Nanak Sahib this phenomenon occurred on about 15 Harh (Bikrami). Because of the accumulating error of about 16 days by that time. Now a days it occurs on about 8 Harh (Bikrami). In another 500 years it will start occurring in Jeth of the Bikrami calendar. Why this shift takes place is because the seasons depend upon the position of the sun relative to the first point of Aries of the Western zodiac. This is one of the two points where the celestial equator and the ecliptic meet. This point is not stationary but has a retrograde motion of about 50.3" of arc. This retrograde movement is called precession of the equinoxes. The first point of Aries of the Indian zodiac is fixed. The Bikrami year is the time the sun takes to travel from first point of Aries of the fixed Indian zodiac to the same point next year. Its modern value is 365d 6h 9m 9.7s. The year of the seasons - the tropical year - is the time the sun takes to travel from the first point of Aries of the Western zodiac to the same point next year. In the mean time the first point of the Western Zodiac has retrograded by 50.3" (equivalent to about 20 minutes in time). That is why the tropical year is about 20 minutes shorter than the Bikrami solar year. The modern length of the tropical year is 365d 5h 48m 45.3s. Since, the Gregorian calendar that most of the world uses for civil purposes, is based on the length of the tropical year its months have a permanent relationship with the seasons - summer will always begin in June etc. The Barah Maha *banis* of

[2] In the 'Panchanga Divakar 2054 BK, 1997/98CE - Hindi' the date when the chariot of the sun turns from northerly to southerly direction and the beginning of rainy season is given as 9 Harh / 22 June.


वि० संवत् २०५४, आषाढ़ कृष्ण पक्ष, शाकः १९१९, सन् १९९७ ई० (ता० २१ जून से ४ जुलाई तक)

[3] This explanation applies to the northern hemisphere. The reverse of this whole phenomenon is true for the southern hemisphere. During Guru Sahiban's period, as today too, most of the world's population lived in the northern hemisphere. The Barahmahas of Guru Sahiban mention the relation of months with seasons of Punjab and not of Australia. The *bani* has to be interpreted in the same context in which it was revealed.

Guru Nanak Sahib in Raga Tukhari and of Guru Arjan Sahib in Raga Manjh, and Ruti Slok *bani* of Guru Arjan Sahib have *Chet* as the first month.

These *banis* also mention the seasons associated with the months:

ਆਸਾੜੁ ਤਪੰਦਾ ਤਿਸੁ ਲਗੈ ਹਰਿ ਨਾਹੁ ਨ ਜਿੰਨਾ ਪਾਸਿ ॥ – ਪੰ: ੧੩੪
ਪੋਖਿ ਤੁਖਾਰੁ ਨ ਵਿਆਪਈ ਕੰਠਿ ਮਿਲਿਆ ਹਰਿ ਨਾਹੁ ॥ – ਪੰ: ੧੩੫
ਚੇਤੁ ਬਸੰਤੁ ਭਲਾ ਭਵਰ ਸੁਹਾਵੜੇ ॥ ਬਨ ਫੂਲੇ ਮੰਝ ਬਾਰਿ ਮੈ ਪਿਰੁ ਘਰਿ ਬਾਹੁੜੈ ॥ – ਪੰ: ੧੧੦੯
ਆਸਾੜੁ ਭਲਾ ਸੂਰਜੁ ਗਗਨਿ ਤਪੈ ॥ ਧਰਤੀ ਦੂਖ ਸਹੈ ਸੋਖੈ ਅਗਨਿ ਭਖੈ ॥ – ਪੰ: ੧੧੦੯
ਸਾਵਣਿ ਸਰਸ ਮਨਾ ਘਣ ਵਰਸਹਿ ਰੁਤਿ ਆਏ ॥ ਮੈ ਮਨਿ ਤਨਿ ਸਹੁ ਭਾਵੈ ਪਿਰ ਪਰਦੇਸਿ ਸਿਧਾਏ ॥ – ਪੰ: ੧੧੦੯
ਮੋਰੀ ਰੁਣ ਝੁਣ ਲਾਇਆ ਭੈਣੇ ਸਾਵਣੁ ਆਇਆ ॥ – ਪੰ: ੫੫੭
ਸਾਵਣੁ ਆਇਆ ਹੇ ਸਖੀ ਜਲਹਰੁ ਬਰਸਨਹਾਰੁ ॥ – ਪੰ: ੧੨੮੦
ਭਾਦਉ ਭਰਮਿ ਭੁਲੀ ਭਰਿ ਜੋਬਨਿ ਪਛੁਤਾਣੀ ॥ ਜਲ ਥਲ ਨੀਰਿ ਭਰੇ ਬਰਸ ਰੁਤੇ ਰੰਗੁ ਮਾਣੀ ॥ – ਪੰ: ੧੧੦੯

In India the year consists of six distinct seasons. The following lines mention each of those six seasons.

ਰੁਤਿ ਸਰਸ ਬਸੰਤ ਮਾਹ ਚੇਤੁ ਵੈਸਾਖ ਸੁਖ ਮਾਸੁ ਜੀਉ ॥ – ਪੰ: ੯੨੭
ਗ੍ਰੀਖਮ ਰੁਤਿ ਅਤਿ ਗਾਖੜੀ ਜੇਠ ਅਖਾੜੈ ਘਾਮ ਜੀਉ ॥ – ਪੰ: ੯੨੯
ਰੁਤਿ ਬਰਸੁ ਸੁਹੇਲੀਆ ਸਾਵਣ ਭਾਦਵੇ ਆਨੰਦ ਜੀਉ ॥ ਘਣ ਉਨਵਿ ਵੁਠੇ ਜਲ ਥਲ ਪੂਰਿਆ ਮਕਰੰਦ ਜੀਉ ॥ – ਪੰ: ੯੨੯
ਰੁਤਿ ਸਰਦ ਅਡੰਬਰੋ ਅਸੂ ਕਤਕੇ ਹਰਿ ਪਿਆਸ ਜੀਉ ॥ – ਪੰ: ੯੨੯
ਰੁਤਿ ਸਿਸੀਅਰ ਸੀਤਲ ਹਰਿ ਪ੍ਰਗਟੇ ਮੰਘਰ ਪੋਹਿ ਜੀਉ ॥ – ਪੰ: ੯੨੯
ਹਿਮਕਰ ਰੁਤਿ ਮਨਿ ਭਾਵਤੀ ਮਾਘੁ ਫਗਣੁ ਗੁਣਵੰਤ ਜੀਉ ॥ – ਪੰ: ੯੨੯

The association of the seasons with the months is not of a permanent nature in Bikrami calendar, because the year of the Bikrami calendar is sidereal - based on the revolution of the earth around the sun as measured from a fixed star. The tropical year or the year of seasons does not have any star as the reference point, but is measured from spring equinox to spring equinox or from summer solstice (ਰਥੁ ਫਿਰੈ) to summer solstice (ਰਥੁ ਫਿਰੈ) next year. We have based the Nanakshahi calendar on this length of the year - ਰਥੁ ਫਿਰੈ to ਰਥੁ ਫਿਰੈ. The Bikrami year is longer than the this by about 20 minutes and 25 seconds. That is why the months of the modern Bikrami calendar drift in seasons at the rate of about 1 day in 70 / 71 years on the average. The drift is of about a week in 500 years, a month in 2100 years, reverse of seasons in 13000 years, and complete cycle in 26000 years. These facts are known to and accepted by the Hindu *panchanga* editors, and learned Pundits.
This drift can be seen from the dates of *Sangrands* given for various epochs in the following tables:

Bikrami Calendar[i] is not according to Gurbani
Relation of seasons with months changes with the passage of time

Sangrand Dates at 16-Year Interval in CE calendar

		1999	**2015**	**2031**	**2047**	**2063**	**2079**	**2095**	**2111**	**2127**	**2143**	**2159**
Magh	**Jan**	14	14	14	14	14	14	15	16	16	16	16
Phagun	**Feb**	12	13	13	13	13	13	13	14	14	14	14
Chet	**Mar**	14	14	15	15	15	15	15	16	16	16	16
Vaisakh	**Apr**	14	14	14	14	14	14	14	15	16	16	16
Jeth	**May**	15	15	15	15	15	15	15	16	16	17	17
Harh	**Jun**	15	15	15	15	15	15	15	17	17	17	17
Sawan	**Jul**	16	16	17	17	17	17	17	18	18	18	18
Bhadon	**Aug**	17	17	17	17	17	17	17	18	18	19	19
Asu	**Sep**	17	17	17	17	17	17	17	18	18	19	19
Katik	**Oct**	17	17	17	17	18	18	18	19	19	19	19
Maghar	**Nov**	16	16	16	16	17	17	17	18	18	18	18

Poh	**Dec**	16	16	16	16	16	16	16	17	18	18	18

Sangrand Dates for some earlier epochs, and for 2099 CE, 2103 CE

		1469	**1539**	**1666**	**1699**	**1752**
Phagun	**Jan**	25	26	27	28	29
Chet	**Feb**	24	25	26	27	27
Vaisakh	**Mar**	27	28	29	29	29
Jeth	**Apr**	27	28	29	29	29
Harh	**May**	28	29	30	31	30
Sawan	**Jun**	29	30	1-Jul	1-Jul	1-Jul
Bhadon	**Jul**	30	31	1-Aug	2-Aug	1-Aug
Asu	**Aug**	30	31	1-Sep	2-Sep	1-Sep
Katik	**Sep**	30	1-Oct	2-Oct	2-Oct	13-Oct
Maghar	**Oct**	29	31	31	1-Nov	12-Nov
Poh	**Nov**	28	29	30	30	11-Dec
Magh	**Dec**	27	28	29	30	*****

**** No Maghi in 1752 CE

		1753	**1799**	**1899**	**1969**	**1999**	**2099**	**2103**
Magh	**Jan**	9	10	12	13	15	15	16
Phagun	**Feb**	8	9	11	12	13	13	14
Chet	**Mar**	10	11	12	14	15	15	16
Vaisakh	**Apr**	9	10	12	13	14	14	15
Jeth	**May**	10	11	13	14	15	15	16
Harh	**Jun**	10	11	13	14	16	16	17
Sawan	**Jul**	12	13	15	16	17	17	18
Bhadon	**Aug**	13	13	15	16	17	17	18
Asu	**Sep**	13	13	15	16	17	17	18
Katik	**Oct**	13	14	16	16	18	18	19
Maghar	**Nov**	12	13	15	15	17	17	18
Poh	**Dec**	11	12	14	15	16	16	17

Bikrami Sangrand - Surya Siddhanta - Month and Date in Common Era Calendar

Julian Calendar to 2 Sep 1752, Gregorian from 14 Sep 1752

CE	**Mg**		**Pg**		**Ch**		**Va**		**Je**		**Hr**		**Sw**		**Bh**		**As**		**Kt**		**Mr**		**Po**		CE
1468-69	12	27	1	25	2	24	3	27	4	27	5	28	6	29	7	30	8	30	9	30	10	29	11	28	1469
1698-99	12	29	1	28	2	27	3	29	4	29	5	31	7	1	8	2	9	2	10	2	11	1	11	30	1699
1751-52	12	30	1	29	2	27	3	29	4	29	5	30	7	1	8	1	9	1	10	13	11	12	12	11	1752
1800	1	11	2	9	3	11	4	10	5	11	6	12	7	13	8	14	9	14	10	14	11	13	12	13	1800
1900	1	12	2	11	3	13	4	12	5	13	6	14	7	15	8	16	9	16	10	16	11	15	12	14	1900
2000	1	14	2	13	3	14	4	13	5	14	6	14	7	16	8	16	9	16	10	17	11	16	12	15	2000
2001	1	14	2	12	3	14	4	13	5	14	6	15	7	16	8	17	9	17	10	17	11	16	12	16	2001
2002	1	14	2	12	3	14	4	14	5	14	6	15	7	17	8	17	9	17	10	17	11	16	12	16	2002
2003	1	14	2	13	3	14	4	14	5	15	6	15	7	17	8	17	9	17	10	18	11	17	12	16	2003
2004	1	14	2	13	3	14	4	13	5	14	6	14	7	16	8	17	9	17	10	17	11	16	12	15	2004
2005	**1**	**14**	**2**	**12**	**3**	**14**	**4**	**13**	**5**	**14**	**6**	**15**	**7**	**16**	**8**	**17**	**9**	**17**	**10**	**17**	**11**	**16**	**12**	**16**	**2005**
2305	**1**	**19**	**2**	**18**	**3**	**20**	**4**	**19**	**5**	**20**	**6**	**20**	**7**	**22**	**8**	**22**	**9**	**22**	**10**	**23**	**11**	**22**	**12**	**21**	**2305**

Bikrami Sangrand Dates in Gregorian Calendar - Drik Ganita (Modern)

1969	1	13	2	12	3	14	4	13	5	14	6	14	7	16	8	16	9	16	10	16	11	15	12	15	1969
2001	1	13	2	12	3	14	4	13	5	14	6	14	7	16	8	16	9	16	10	17	11	16	12	15	2001
2002	1	14	2	12	3	14	4	13	5	14	6	15	7	16	8	16	9	16	10	17	11	16	12	15	2002
2003	1	14	2	12	3	14	4	14	5	15	6	15	7	16	8	17	9	17	10	17	11	16	12	16	2003
2004	1	14	2	13	3	14	4	13	5	14	6	14	7	16	8	16	9	16	10	16	11	15	12	15	2004
2005	1	13	2	12	3	14	4	13	5	14	6	14	7	16	8	16	9	16	10	17	11	16	12	15	2005
2305	1	18	2	17	3	19	4	18	5	19	6	19	7	21	8	21	9	21	10	22	11	21	12	20	2305
3000	1	28	2	26	3	28	4	27	5	28	6	28	7	30	8	30	9	30	10	31	11	30	12	29	**3000**

Nanakshahi Sangrand Dates in Gregorian Calendar - Forever from 14 March 2003 CE / 535 NS

Ja13 Fe12 Ma14 Ap14 My15 Jn15 Jl16 Au16 Se15 Oc15 No14 De14

It can be seen from the above tables that by the year 3000 CE[4] / NS 1531-32 the Bikrami Sangrands would have moved to near the end of the Gregorian months, while Nanakshahi Sangrands would still occur as at present. Another way of putting this is - in 3000 CE / 1531-32 NS 23 Poh, the *parkash purv* of Guru Gobind Singh Sahib would still occur on 5th January, while 23 Poh of Bikrami would have moved by about two weeks.

Some of the dates of the *rath firai* phenomenon are as follows:

1 CE	24 June[5]	9 Sawan			
101	24 June	8 Sawan			
201	23 June	7 Sawan			
301	22 June	5 Sawan			
401	21 June	3 Sawan			
501	20 June	1 Sawan [6]			
601	20 June	32 Harh			
701	19 June	30 Harh			
801	18 June	28 Harh			
901	17 June	26 Harh			
1001	16 June	24 Harh			
1101	15 June	22 Harh			
1201	15 June	21 Harh			
1301	14 June	20 Harh			
1401	13 June	18 Harh			
1501	12 June	16 Harh	During Guru Nanak Sahib's time the dates were 15 / 16 Harh		
1601	11 June	14 Harh			
1701	10 June	12 Harh	During Guru Gobind Singh Sahib's period the dates were 12/13 Harh		
1801	20 June	9 Harh	Back to 20/21/22 June because of adoption of Gregorian calendar		
1901	22 June	9 Harh			
2001	21 June	7 Harh		7 Harh (Nanakshahi)	
2101	21 June	6 Harh		7 Harh (Nanakshahi)	
2501	21 June	30 Jeth	32 Jeth	7 Harh (Nanakshahi)	
2901	20 June	23 Jeth	25 Jeth	6 Harh (Nanakshahi)	

[4] Because of the uncertainty of the difference between UT and TDT for future years, in critical cases, the Sangrand could be out by one day.

[5] English calendar dates are taken from Jean Meeus's 'Astronomical Tables of the Sun, Moon, and Planets', Willmnn-Bell, Inc. USA. The dates 1701 are of the Julian calendar and after that of the Gregorian calendar. I have adjusted the figures for 1601 and 1701 to reflect Julian dates though Meeus has given Julian dates up to the 1582 changeover. I have considered the day from sunrise to sunrise. The corresponding dates of the Bikrami calendar have been calculated by me.

[6] Beginning of Sidhantic astronomy, and first use of the name of week days based on planet names resulting from Babylonian and Greek astronomy.

The dates of the *desi* months are according to Surya Siddhanta (year length 365d 6h 12m 36s) which was in use during the Guru period and up to the nineteen-sixties when in most of India it was discarded as being inaccurate, and the *panchanga* editors switched over to *Drik Ganita* - calculations according to accurate and observed / observable positions of the sun, the moon, and the planets (year length 365d 6h 9m 10s). The last two values in the third column are based on *Drik Ganita*.

From this table the problem can be very clearly seen. Because the Gregorian calendar is based on the tropical year, the chariot of the sun shall always turn close to 21st June, and the rainy season shall always begin on that day. But in Bikrami calendar it has been changing and shall continue to change, if not fixed, and in 500 Years it shall start occurring in Bikrami Jeth - and the rainy season shall start in Bikrami Jeth. For the seasons to retain permanent association with the months the calendar year has to be based on the length of the tropical year (year length 365d 5h 48m 45.3s).

Nanakshahi Calendar

We have given up the Bikrami calendar for the following reasons:

1. Its months do not have a permanent relationship with the seasons as mentioned in Gurbani.
2. We should have our own calendar. A calendar is a part of the identity of a Nation.

   The Bahai faith is the newest faith, being about 200 years old. Its followers gave up on the Hijri calendar and have their own calendar which is based on tropical year length and has permanent correspondence with the Common Era calendar. All major religions of the world have their own calendar. A calendar is an important part of the identity of a Nation.

   The following quotation from 'Mapping Time' says it all:

   "Today each of the major religions has its own calendar which is used to programme its religious ceremonies, and it is almost as true to say that each calendar has its religion. The Christians, the Moslems, the Jews, the Buddhists, the Jains, the Hindus, the Zoroastrians, and, more recently, the adherents of Bahai, all have their calendars."

   -Richards, E.G., Mapping Time, p.6
3. The lunar-date system is not very practical. For celebrations of important days we should use a calendar based on the solar tropical year. The Bikrami calendar is luni-solar based on the sidereal year.

We have fixed the dates of 'Sangrands' in Nanakshahi calendar so that the phenomenon of *rath firai* shall always occur in Harh close to 7th day of the month, and it shall stay according to Gurbani - the relation of months and seasons staying as at present. The Gregorian calendar, the Iranian solar calendar, and the Bahai calendar are all also based on the length of the tropical year.

When Guru Sahiban revealed Barahmaha and Ruti Sloka Banis, they had the seasons in Punjab and not the ones in Australia, in their mind, just like Guru Sahiban used the Indian units rati, tola, masa, ser, maan etc., and not the British units ounces, pounds, stone, nor the international units grams, and kilograms etc. The interpretation of Gurbani has to be made in the same context in which it was originally revealed. It is true that Guru Sahiban's message is universal, but there are certain thoughts expressed in Gurbani which are region-specific. Barahmaha's spiritual message is universal, but the seasons and their occurrence in particular months is region specific - Punjab.

The *tuk* ਰਥੁ ਫਿਰੈ ਛਾਇਆ ਧਨ ਤਾਕੈ ਟੀਡੁ ਲਵੈ ਮੰਝਿ ਬਾਰੇ ॥ ਪੰ: ੧੧੦੮ in Raga Tukhari in the month of Asarh (Harh) refers to the date when the day is longest in the year, when the northern declination of the sun is maximum , when the sun changes its course from northerly to southerly direction.. This phenomenon occurred on the Sawan Sangrand at the time of beginning of Siddhantic astronomy. Because of the shift of the Sangrands due to the precession of the equinoxes, it occurred about 15th Asarh at the time of Guru Nanak Sahib, and around 13th Asarh in the first decade of the 18th Century, and occurs around 8h Asarh of Bikrami calendar currently. This will shift to the close of Jeth in another 600 years. Here it does not matter whether it is Australia or India, it will occur in Jeth, contrary to its mention in the month of Asarh. Unlike Bikrami calendar, Nanakshahi calendar is based on the tropical length of the year, therefore no further shift will occur and it will always occur in the month of Asarh.

In 6500 years Asarh will move into mid-September. In September, it is autumn in the Northern hemisphere, and spring in the southern hemisphere (Australia included). My request is to understand the problem with the Bikrami calendar and not to offer far-fetched explanations.

The names of the month of the Nanakshahi calendar are the same as given in Barahmahas, except that their popular variants are used. We read Gurbani, and we want our children to read and understand Gurbani. We have to tell them about calendars as well, when explaining Gurbani Barahmahas.

On the beginning month of the Nanakshahi Calendar, I just want to emphasize that in the calendar we cannot have Chet as the twelfth month, when it is the first month in both the Barahmahas, and Ruti Slok Banis. Nanakshahi year would start with 1 Chet, irrespective of the fact that Guru Nanak Sahib's *parkash* day falls on a different day. If the names of the existing months have to be used then this is the right procedure. Hazrat Mohammad Sahib's flight to Medina from Mecca did not take place on 1 Muharram, yet their new year starts on that date. Christ was not born on 1 January, yet the new CE year starts on that date.

Gurpurb Dates

During the Guru period, mainly Bikrami luni-solar, Saka, and the Hijri calendars were in use in India, while the calendar used in England was the Julian calendar. The Gregorian calendar , known as Common Era now a days, that is in use throughout the world along with indigenous calendars, is not the same as the Julian calendar. The dates of the Julian calendar are not the same as those of the Gregorian. If we have to use the dates of the Julian Calendar then we shall have to follow the method the Greek Orthodox Church and the Ukrainian Orthodox Church use. They celebrate Christmas on 25th December of the Julian Calendar and not on the 25th of the Gregorian calendar. The 25th December (Julian) falls on 7th January of the Gregorian calendar nowadays. Therefore, they celebrate Christmas on 7th January Gregorian.

The original date of Shaheedi of Guru Tegh Bahadur Sahib is 11 Maghar, 1732 BK / 11 November, 1675 Julian. We have converted 11 Maghar in the Nanakshahi calendar to 24th November Gregorian. This date, i.e. 11 Maghar ,will always fall on 24th November. Coincidentally, if we convert 11 November Julian to Gregorian it is also 24th November in this century. The birthday of Guru Gobind Singh Sahib was on 23 Poh 1723 BK / 22 December 1666 Julian. Nowadays, 22 December Julian occurs on 4th January Gregorian, and in the next century it will fall on 5th January. We have taken 23 Poh as the original date, and according to Nanakshahi calendar it will always fall on 5th January. The Julian dates as well as the dates of the Bikrami calendar will continue shifting in the Gregorian calendar. The shift of months in seasons is even greater in the Bikrami calendar than it is in the Julian calendar.

I am of the opinion that we should neither use the Julian dates of the Guru period in the Gregorian calendar, nor convert the Julian dates into Gregorian and then use them. The original dates are in either lunar dates or the solar dates of the Bikrami calendar and in some instances of the Hijri calendar. The Julian calendar was unknown in Punjab at that time. We should celebrate the Gurpurbs on the original solar dates. For the Nanakshahi calendar we have taken those original solar dates. These original solar dates, as given in Nanakshahi Calendar, will always occur on the fixed dates of the Gregorian calendar. Don't we celebrate the Shaheedi purbs of Sahibzadas on 8 and 13 Poh, which are solar dates?

Amavasyas, and Pooranmasis

We have discarded the lunar calendar of *sudis*, and *vadis* for the determination of the dates of Gurpurbs. However Guru Nanak Sahib's *parkash* Gurpurb, and Bandi Chhor Divas (Divali) shall continue to be celebrated according to the old calendar. However, yielding to the pressure from the 'Sants' Hola Muhalla date was also made an exception. Even this did not appease the 'Sants' . They do not want to give up the Bikrami Calendar. We have included the festivals of other Nations in the Nanakshahi Calendar for information. We decided to put them in the category of 'Other Festivals / Govt Holidays'. Gurpurbs and Sikh festivals have been shown separately.

The Calendar Reform Committee decided that the dates for Amavasyas and Pooranmasis should be given in the Calendar, even though we do not believe in their observance. We have to educate the Sikh masses first. Thousands of Sikh pilgrims go to the Gurdwaras on these occasions. Basant Panchami is observed in Gurdwara Dukh Nivaran Sahib in Patiala when lakhs of people take a dip in the holy *sarovar*. If we do not give the dates of these tithis, people would simply take them from Hindu Panchangs. The best approach is to explain the real meanings of Gurbani to the

Sangat on all these occasions, and persuade them not to follow these ritual-based festivals. This applies to Sangrands as well. We have mentioned in the Nanakshahi Calendar, that the first day of the Nanakshahi months has nothing to do with the sun's entry into the rasis as is the present practice. That is why Sangrands of some months of Nanakshahi calendar differ from those of the Bikrami calendar. Eventually all will differ, since the Bikrami Sangrands will go on shifting while Nanakshahi Sangrands remain fixed in relation to the CE calendar, since the precession of equinoxes has been taken into consideration.

The month names are the same as in Gurbani - Chet, Vaisakh, Jeth, Harh, Sawan, Bhadon, Asu, Katik, Maghar, Poh, Magh, and Phagun. In their *hukamnamas* Guru Sahiban had used the popular names of the months. Chet has been kept as the first month of the year as in Gurbani. The first five months have thirty-one days each, while the last seven thirty days each. Whenever Phagun falls in leap February, it shall have an extra day and shall have thirty-one days. The period from spring equinox to autumn equinox has about 186 days, that is why we have kept the first five months with thirty one days each.

The year commences on 1 Chet which has been fixed on 14th March. Since the number of days in the months have been fixed, any given month of Nanakshahi calendar shall always begin (*Sangrand*) on the same date of the Gregorian calendar every year. These dates (*Sangrands*) are as follows:

Chet - 14 March,	Vaisakh (Vaisakhi) - 14 April	Jeth - 15 May	Harh - 15 June
Sawan - 16 July	Bhadon - 16 August	Asu - 15 September	Katik - 15 October
Maghar - 14 November	Poh - 14 December	Magh - 13 January	Phagun - 12 Feb.

The year 1 Nanakshahi commenced in 1469 CE, thus 536 Nanakshahi started on 14 March 2004 CE.
The fixing of *Sangrands* on the same date of every month of the Common Era calendar was rejected because of the following :

a. The number of days in months of the CE calendar are *arbitrarily* fixed, without any astronomical consideration. The days vary from 28 to 31. The number of days for months in Nanakshahi calendar are 30 and 31 only, based on the length of seasons. The first 5 months are of 31 days, and the last seven 30 days each, with leap Phagun having 31 days. If the *Sangrand* date had been fixed, e.g. 13th of every month of the Gregorian calendar, then the number of days in the Nanakshahi month would have been the same as in the corresponding month of the Gregorian calendar month in which the *Sangrand* occurred.

b. In the tropical year the days that make up spring and summer seasons are more than those that make up the autumn and winter seasons.

March 31, April 30, May 31, June 30, July 31, August 31 - Total 184 days
Chet 31, Vaisakh 31, Jeth 31, Harh 31, Sawan 31, Bhadon 30 - Total 185 days.

The natural length of the first 6 months in the tropical year is approx. 186 days, and of the last 6 months 179 days. This is because of the varying speed of the earth around the sun, in the summer the earth being slower. The Nanakshahi Calendar is more accurate, being closer to the natural length of summer and winter months than the CE calendar.

c. It is not difficult to remember the CE dates of the beginning of the months (*Sangrands*) of Nanakshahi Calendar. Starting from March 14 for Chet these occur in pairs for 10 months :
14, 14, 15,15, 16,16, 15,15, 14,14 and then in January 13, February 12.

d. Having a month of 28 days does not make sense according to astronomical considerations.

e. **Finally, Nanakshahi Calendar has its own character, it is not a copycat of the CE calendar. It is scientific, correct, and also, very importantly, is based on Gurbani (**ਰਥੁ ਫਿਰੈ ਛਾਇਆ ਧਨ ਤਾਕੈ ਟੀਡੁ ਲਵੈ ਮੰਝਿ ਬਾਰੇ ॥**) and shall stay according to Gurbani.**

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Comparison between Nanakshahi and Bikrami Calendars

	Nanakshahi	Bikrami
1	Based on length of Tropical year 365d 5h 48m 45s	Based on Sidereal year 365d 6h 9m 10s
2	Days in months 31 or 30; first five months contain 31 days each and last seven 30 days each -a very simple rule to remember.	Months may contain 29,30,31 or 32 days; no simple rule for determination of the number of days in a given month
3	Fixed leap year rule -last month to have 1 extra day every four years	No fixed rule
4	Fixed dates of Sangrands in Common Era	Sangrand depends on entrance of sun into 'rasis', dates of Sangrands not fixed in Common Era
5	Permanent relation between seasons and months; will stay according to Gurbani	Months will shift in seasons - on the average by 1 day per 70 / 71 years - already shift of 7 / 8 days since Guru Nanak Sahib's time
6	Gurpurbs on fixed dates according to both Nanakshahi and Common Era calendars	Gurpurb dates change from year to year in CE calendar
7	All Gurpurbs occur once every year, according to both NS and CE calendars.	In some years no Parkash Gurpurb of Guru Gobind Singh Sahib, while in others it occurs twice in one year of the CE calendar. In 1999 CE there was no Parkash Gurpurb of Guru Gobind Singh Sahib.
8	No 'unclean' month (malmaas) in the year. No month or day is 'clean' or 'unclean' according to Gurbani	A 'mal mas' or 'unclean month' is added every two or three years in the lunar year to keep it in step with the solar year. In this month Gurpurbs cannot be celebrated. This whole thing is contrary to Gurbani.
9	Gurpurbs fixed according to solar dates e.g. 23 Poh for Parkash of Guru Gobind Singh Sahib, and 23 Poh will always occur on 5th January. (We gave precedence to the original solar dates over the lunar dates and English dates.)	Gurpurbs fixed according to lunar dates e.g Poh Sudi 7, therefore, changing from year to year in CE calendar. The lunar year contains 354 / 355 days while solar year 365 / 366 days. When 'mal mas' is added the lunar year becomes 383 / 384 days long. In 2000 CE Poh Sudi 7 was on 13th January according to Surya Siddhanta Panchangas (UP), while on 14th January according to Punjab Panchangs. So the same Gurpurb was celebrated on two different dates - on 13th January in Patna Sahib, and by some in Punjab on 14th January. Another problem of the lunar calendar is that the same 'tithi' can happen on two days or two 'tithis' can happen on one day.

Some of the objections raised in public meetings by the opponents of the Nanakshahi Calendar:

Objection: Since, in Guru Granth Sahib the *tuk* "ਆਵਨਿ ਅਠਤਰੈ ਜਾਨਿ ਸਤਾਨਵੈ ਹੋਰੁ ਭੀ ਉਠਸੀ ਮਰਦ ਕਾ ਚੇਲਾ ॥ – ਪੰ: ੭੨੩" relates to the Bikrami calendar date, and that there are *Banis* in Guru Granth Sahib related to *tithis*, we cannot give up Bikrami calendar. Further, if we give up Bikrami calendar how are we to explain the meaning of this line to our children?

Answer:

ਗੁਰਬਾਣੀ ਵਿੱਚ ਮਾਪ-ਤੋਲ ਅਦਿ ਇਕਾਈਆਂ ਸੰਬੰਧੀ ਕੁੱਝ ਤੁਕਾਂ:

ਸੁ ਸਬਦ ਕਾ ਕਹਾ ਵਾਸੁ ਕਥੀਅਲੇ ਜਿਤੁ ਤਰੀਐ ਭਵਜਲੁ ਸੰਸਾਰੋ ॥

ਤੈ ਸਤ **ਅੰਗੁਲ** ਵਾਈ ਕਹੀਐ ਤਿਸੁ ਕਹੁ ਕਵਨ ਅਧਾਰੋ ॥ – ਪੰ: ੯੪੪

ਗਜ ਸਾਢੇ ਤੈ ਤੈ ਧੋਤੀਆ ਤਿਹਰੇ ਪਾਇਨਿ ਤਗ ॥ ਗਲੀ ਜਿਨ੍ਾ ਜਪਮਾਲੀਆ ਲੋਟੇ ਹਥਿ ਨਿਬਗ ॥

ਓਇ ਹਰਿ ਕੇ ਸੰਤ ਨ ਆਖੀਅਹਿ ਬਾਨਾਰਸਿ ਕੇ ਠਗ ॥੧॥– ਪੰ: ੪੭੬

ਰਾਖਹੁ ਕੰਧ ਉਸਾਰਹੁ ਨੀਵਾਂ ॥ ਸਾਢੇ ਤੀਨਿ **ਹਾਥ** ਤੇਰੀ ਸੀਵਾਂ ॥ – ਪੰ: ੬੫੯

ਕਬੀਰ ਕੋਠੇ ਮੰਡਪ ਹੇਤੁ ਕਰਿ ਕਾਹੇ ਮਰਹੁ ਸਵਾਰਿ ॥ ਕਾਰਜੁ ਸਾਢੇ ਤੀਨਿ **ਹਥ** ਘਨੀ ਤ ਪਉਨੇ ਚਾਰਿ ॥ – ਪੰ: ੧੩੭੬

ਊਡੇ ਊਡਿ ਆਵੈ ਸੈ **ਕੋਸਾ** ਤਿਸੁ ਪਾਛੈ ਬਚਰੇ ਛਰਿਆ ॥ ਤਿਨ ਕਵਣੁ ਖਲਾਵੈ ਕਵਣੁ ਚੁਗਾਵੈ ਮਨ ਮਹਿ ਸਿਮਰਨੁ ਕਰਿਆ ॥੩॥– ਪੰ: ੧੦

ਮੇਰੀ ਮੇਰੀ ਕੈਰਉ ਕਰਤੇ ਦੁਰਜੋਧਨ ਸੇ ਭਾਈ ॥ ਬਾਰਹ **ਜੋਜਨ** ਛਤ੍ਰ ਚਲੈ ਥਾ ਦੇਹੀ ਗਿਰਝਨ ਖਾਈ ॥੨॥ – ਪੰ: ੬੯੩

ਘੜੀ ਮੁਹਤ ਕਾ ਲੇਖਾ ਲੇਵੈ **ਰਤੀਅਹੁ ਮਾਸਾ** ਤੋਲ ਕਢਾਵਣਿਆ ॥੫॥ – ਪੰ: ੧੨੭

ਆਪੇ ਕੰਡਾ ਆਪਿ ਤਰਾਜੀ ਆਪੇ ਤੋਲਿ ਤੋਲਾਇਆ ॥ ਆਪੇ ਸਾਹੁ ਆਪੇ ਵਣਜਾਰਾ ਆਪੇ ਵਣਜੁ ਕਰਾਇਆ ॥

ਆਪੇ ਧਰਤੀ ਸਾਜੀਅਨੁ ਪਿਆਰੈ ਪਿਛੈ **ਟੰਕੁ** ਚੜਾਇਆ ॥੧॥– ਪੰ: ੬੦੫

ਕਹਿਆ ਸੁਣਹਿ ਨ ਖਾਇਆ ਮਾਨਹਿ ਤਿਨ੍ਹਾ ਹੀ ਸੇਤੀ ਵਾਸਾ ॥ ਪ੍ਰਣਵਤਿ ਨਾਨਕੁ ਦਾਸਨਿ ਦਾਸਾ ਖਿਨੁ **ਤੋਲਾ** ਖਿਨੁ **ਮਾਸਾ** ॥੪॥੩॥੧੧॥

– ਪੰ: ੧੧੭੧

ਗਜੀ ਨ ਮਿਨੀਐ ਤੋਲਿ ਨ ਤੁਲੀਐ ਪਾਚਨੁ **ਸੇਰ** ਅਢਾਈ ॥ ਜੌ ਕਰਿ ਪਾਚਨੁ ਬੇਗਿ ਨ ਪਾਵੈ ਝਗਰੁ ਕਰੈ ਘਰਹਾਈ ॥੨॥ – ਪੰ: ੩੩੫

ਸਾਢੇ ਤ੍ਰੈ **ਮਣ** ਦੇਹੁਰੀ ਚਲੈ ਪਾਣੀ ਅੰਨਿ ॥ ਆਇਓ ਬੰਦਾ ਦੁਨੀ ਵਿਚਿ ਵਤਿ ਆਸੂਣੀ ਬੰਨਿ੍ ॥ – ਪੰ: ੧੩੮੩

ਖਿਨੇ **ਪਲੁ** ਨਾਮੁ ਰਿਦੈ ਵਸੈ ਭਾਈ ਨਾਨਕ ਮਿਲਣੁ ਸੁਭਾਇ ॥੧੦॥੪॥ – ਪੰ: ੬੩੭

ਵਿਸੁਏ ਚਸਿਆ ਘੜੀਆ ਪਹਰਾ ਥਿਤੀ ਵਾਰੀ ਮਾਹੁ ਹੋਆ ॥ – ਪੰ: ੧੨

We have discarded ਅੰਗੁਲ, ਹਾਥ, ਹਥ, ਗਜ and are using centimeters, and meters to measure length. We have discarded ਜੋਜਨ, ਕੋਸ and are using kilometers to measure distance. We have discarded ਵਿਸੁਏ, ਚਸੁਏ, ਘੜੀ, ਪਲ, ਮਹੂਰਤ and are using seconds, minutes, and hours to measure time. We have discarded ਰਤੀ, ਮਾਸਾ, ਟੰਕੁ, ਤੋਲਾ, ਸੇਰ, ਮਣ and are using milligrams, grams, kilograms, and quintals to measure weight.

All these units that we have discarded are mentioned in Gurbani. Why, then, can't we discard the Bikrami Calendar whose months wander in seasons and do not stay according to Gurbani?

Yes, there are Banis in Guru Granth Sahib depicting tithis of the lunar calendar. But, Guru Sahib in one such Bani, sums up towards the close :

ਆਪੇ ਪੂਰਾ ਕਰੇ ਸੁ ਹੋਇ ॥ ਏਹਿ ਥਿਤੀ ਵਾਰ ਦੂਜਾ ਦੋਇ ॥

ਸਤਿਗੁਰ ਬਾਝਹੁ ਅੰਧੁ ਗੁਬਾਰੁ ॥ ਥਿਤੀ ਵਾਰ ਸੇਵਹਿ ਮੁਗਧ ਗਵਾਰ ॥ ਪੰ: ੮੪੩

and Bhagat Kabir Ji's Bani says it in no uncertain terms:

ਕਾਹੇ ਮੇਰੇ ਬਾਮ੍ਹਨ ਹਰਿ ਨ ਕਹਹਿ ॥ ਰਾਮੁ ਨ ਬੋਲਹਿ ਪਾਡੇ ਦੋਜਕੁ ਭਰਹਿ ॥ ੧ ॥ ਰਹਾਉ ॥

ਆਪਨ ਊਚ ਨੀਚ ਘਰਿ ਭੋਜਨੁ ਹਠੇ ਕਰਮ ਕਰਿ ਉਦਰੁ ਭਰਹਿ ॥

ਚਉਦਸ ਅਮਾਵਸ ਰਚਿ ਰਚਿ ਮਾਂਗਹਿ ਕਰ ਦੀਪਕੁ ਲੈ ਕੂਪਿ ਪਰਹਿ ॥ ੨ ॥ – ਪੰ: ੯੭੦

You can explain the meaning of the *tuk* - "ਆਵਨਿ ਅਠਤਰੈ ਜਾਨਿ ਸਤਾਨਵੈ ਹੋਰੁ ਭੀ ਉਠਸੀ ਮਰਦ ਕਾ ਚੇਲਾ ॥" to the children the same way you have been explaining the meanings of **ਅੰਗੁਲ, ਹਾਥ, ਹਥ, ਗਜ, ਜੋਜਨ, ਕੋਸ, ਵਿਸੁਏ, ਚਸੁਏ, ਘੜੀ, ਪਲ, ਮੂਰਤ, ਮਹੂਰਤ, ਰਤੀ, ਮਾਸਾ, ਟੰਕੁ, ਤੋਲਾ, ਸੇਰ, ਮਣ, ਟਕਾ, ਦਾਮ** which are mentioned in Gurbani and no longer in use.

Objection: Christians celebrate Easter according to the lunar calendar. Muslims celebrate their sacred days according to the Hijri calendar which is a purely lunar calendar. Why can't we?

Answer: Easter, even though celebrated according to the lunar calendar, falls within a well defined period. It cannot occur before 22nd March or after 25th April in any year. It stays within the spring season, since its determination is based on 21st March of the Gregorian solar calendar which is based on the length of the tropical year. But the Bikrami lunar calendar is attached to the Bikrami solar year which is not based on the length of tropical year. So, the dates of the lunar calendar also shift in seasons. In 13000 years Diwali would occur 6 months later in the Gregorian calendar, in the months of April-May, instead of October-November as at present., and *parkash* Gurpurb of Guru Nanak Sahib would then occur in May. Is this what we want to happen? Like other dates which have been fixed in

the Nanakshahi calendar we should fix the dates of Holla Muhalla, Bandi Chhor Divas(Diwali), and and *parkash* Gurpurb of Guru Nanak Sahib too, so that these dates do not drift as well.

Secondly, in the U.K. there is a movement to fix the date of Easter according to the solar calendar and get it de-linked from the lunar calculations. In fact, in 1928 an act was passed in both houses of the British parliament that Easter be celebrated on the first Sunday after the second Saturday in April. To make this act into law the last stage remains. An effort was made in 1999 in the House of Lords to complete the final stage. However, after a debate for a few hours the Hon'ble Lord who placed the motion was persuaded to withdraw it.

Muslims use a lunar calendar. But there are no *adhik* or *malmasas*. Holy Quran forbade the 13th intercalary month. In the Hindu calendar the extra month is introduced every two-three years to keep it in step with the solar calendar. In 2061 BK the month of Sawan is repeated, i.e. there are two months of Sawan, making thirteen months or 383/384 days in the lunar year. This is the reason why in 2004 CE there is no *parkash* Gurpurb of Guru Gobind Singh Sahib according to the Bikrami calendar. Poh Sudi 7 of Bikrami lunar calendar has been pushed by this extra month into January 2005. Since there are two months called Sawan I and Sawan II, tithis of Sawan Gurpurbs occur twice separated by a month. Such an extra month could be designated in Chet, Vaisakh, Jeth, Harh, Sawan, Bhadon, Asu, or Phagun. Complicated, isn't it? Not only that, two lunar dates could occur on the same day or same lunar date could occur on two consecutive days.

Objection: Guru Sahiban used the Bikrami Calendar, and they did not find anything wrong with it.
Answer: Guru Sahiban used the Bikrami calendar because it was the calendar used by the people for day-to-day requirements, like fixing of dates of marriages, religious performances, dating of events etc. Guru Sahiban used *tola, man, ser, gaz, kos, ratti, moorat(Muhurat), pal, gharhi* etc. They did not find anything wrong with these too, yet these units have been discarded, even though these are mentioned in Gurbani.

Objection: If Guru Sahiban had wanted to, they could have made a new calendar.
Answer: Certainly, but they did not. Neither did they invent the telephone, the car, airplanes, and other modern appliances like TV's, Computers etc. It was left by them for the following generations of engineers and inventors.

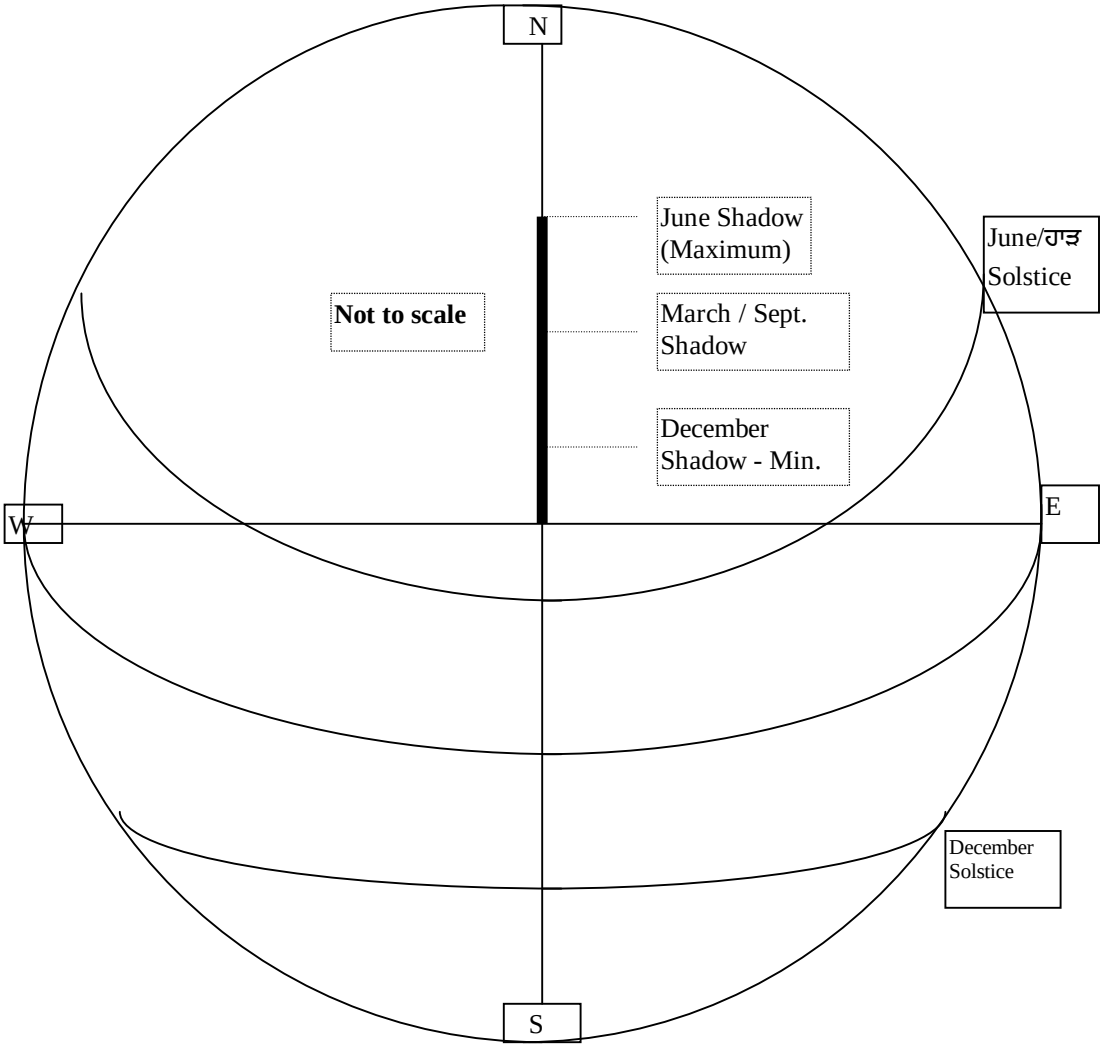
Objection: We had managed for 500+ years without the new calendar. We could have continued like that.
Answer: People had managed without cars, airplanes, telephones, cell phones, TV's, fridges, etc., for thousands of years, and could have continued to manage like that.

Objection: Why had no one before Mr. Purewal come up with this idea?
Answer: Is Mr. Purewal to blame for that? But here are the reasons:
S. Karam Singh Historian had this misgiving that Bikrami calendar was accurate to seconds in thousands of years[7], but it was not. The Bikrami year, which is sidereal, was out by almost three and a half minutes from the modern value of the sidereal year, and by more than 20 minutes from the length of the tropical year. Other historians accepted S. Karam Singh's word. Mr. Purewal had an interest in astronomy, studied Hindu treatises like Surya Siddhanta, Graha Laghva, Makrand Sarni that pundits used for calculation of panchangas; he was a computer professional, he had written computer programs - probably before anyone else - based on the methods given in those treatises; he was a student of Gurbani; he was a student of Sikh history, he had produced the "500 Year Jantri", calculated according to Surya Siddhanta, which had been published by the Punjab School Education Board in 1994 CE; he had intellectual pursuits as his hobby (he was on the Punjab Chess Team in 1961 which participated in the Nationals; he was a member of the Bedfordshire Chess Team in England), he was a Science and Math teacher in Punjab before emigrating to England in 1965; he was Senior Engineer with Texas Instruments, Bedford, in England before moving to Canada in 1974; he was Manager of Data Processing Department of a company in Canada, he is a co-inventor of a device which is patented in Canada - isn't this enough of a background for a person to come up with a single new idea?

(Please forgive me for mentioning all of the above. It was unavoidable to answer the question.)

[7] ਕਰਮ ਸਿੰਘ ਹਿਸਟੋਰੀਅਨ, ਗੁਰਪੁਰਬ ਨਿਰਣਯ

ਰਥੁ ਫਿਰੈ ਛਾਇਆ ਧਨ ਤਾਕੈ ਟੀਡੁ ਲਵੈ ਮੰਝਿ ਬਾਰੇ ॥ -



ਆਸਾੜੁ ਭਲਾ ਸੂਰਜੁ ਗਗਨਿ ਤਪੈ ॥
ਧਰਤੀ ਦੂਖ ਸਹੈ ਸੋਖੈ ਅਗਨਿ ਭਖੈ ॥
ਅਗਨਿ ਰਸੁ ਸੋਖੈ ਮਰੀਐ ਧੋਖੈ ਭੀ ਸੋ ਕਿਰਤੁ ਨ ਹਾਰੇ ॥
ਰਥੁ ਫਿਰੈ ਛਾਇਆ ਧਨ ਤਾਕੈ ਟੀਡੁ ਲਵੈ ਮੰਝਿ ਬਾਰੇ ॥
ਅਵਗਣ ਬਾਧਿ ਚਲੀ ਦੁਖੁ ਆਗੈ ਸੁਖੁ ਤਿਸੁ ਸਾਚੁ ਸਮਾਲੇ ॥
ਨਾਨਕ ਜਿਸ ਨੋ ਇਹੁ ਮਨੁ ਦੀਆ ਮਰਣੁ ਜੀਵਣੁ ਪ੍ਰਭ ਨਾਲੇ ॥ ੮ ॥ – ਪੰ: ੧੧੦੮

The shadow of the vertical pole at the centre is minimum on June solstice when sun is high in the sky and maxmimum on December solstice when the sun is low in the sky in the Northern hemisphere. For full explanation see text in the article.

[i] **A Brief Introduction to Major Calendars of India***

To understand why we needed reformed Nanakshahi Calendar, a basic knowledge of the working of the Common Era Calendar and the Bikrami Calendar would be very helpful. This brief introduction to the major Indian Calendars would be useful for that purpose.

COMMON ERA

The Christian Era abbreviated as AD or BC, now a days is more commonly known as Common Era abbreviated as CE or BCE, as the case may be, since the adoption or parallel use of its calendar in most countries of the world. Its ordinary years have 365 days and leap years 366 days. The number of days in each month are fixed. February in a leap year has 29 days but in an ordinary year has 28 days. Prior to 1582 CE the leap year rule was: if a year was divisible by 4 without remainder it was a leap year. This gave an average length of 365.25 days in a year. This length is a little more than the length of the tropical year which is 365.2422 days. Therefore, the beginning of the year in the Julian Calendar, as it was called, occurred a little later every year in relation to the tropical year on which the cycle of seasons depends. In the year 325 CE the spring equinox (day and night equal) occurred on 21 March but because of gradual shift of the beginning of Julian year spring equinox occurred on 11 March, 1582 CE. Calendar was getting out of tune with the seasons.

Pope Gregory on the recommendation of his astronomer introduced the reform to the Julian calendar, removing this discrepancy and altering the leap year rule. The Pope ordered that 5th October 1582 be designated as 15th October (losing 10 days from the calendar), and that the years completely divisible by 4 be leap years with the proviso that century years be leap years only if completely divisible by 400. The new calendar was called the Gregorian calendar. This change was implemented by some countries immediately. England and the United States continued using Julian calendar. They switched to the Gregorian calendar in September 1752 when the difference between the two calendars became 11 days, designating 3rd September 1752 as 14th, thus dropping 11 days. With the reformed Gregorian calendar there will be an error of 1 day in approximately 3300 years in relation to the seasons.

While working with dates one should be very cautious and find out whether the dates given for the period October 1582 to September 1752 are in the Julian system or in the Gregorian system. It would help if with each CE date, where ambiguity can arise, is mentioned OS for old style meaning Julian calendar date, and NS for new style for Gregorian dates. Also, at the beginning of a book or an article on history, mention may be made whether OS stands for change over in 1582 CE or in 1752 CE. To either see the effect of, or use the change over in 1582 CE in place of 1752 CE apply the following rule:

From 5 October, 1582 CE (February, 1700 (Julian) add 10 days,

From 1 March 1700 CE (Julian) to 2 September 1752 CE (Julian) add 11 days.

From the above it is clear that if two authors give different dates for the same event, for the period Oct 1582 CE to Sep 1752 CE, and the dates differ by 10 or 11 days, then it may be assumed that one is using the Julian calendar and the other Gregorian calendar. Since the converted dates in Indian history books are usually based on September 1752 change to Gregorian calendar, all dates of the Guru period are of the Julian calendar. The date of Vaisakhi of 1699 CE is 29 March in Julian calendar, but is 8 April in Gregorian calendar.

Some communities still celebrate Christmas according to the Julian Calendar. In the present Century the difference between the dates of the two calendars is 13. Therefore, 25th December of the Julian Calendar falls on 7th January of the Gregorian. That is why Ukrainian Orthodox Church celebrates Christmas on 7th January. In the year 2101 CE this date will shift further to 8th January in the Gregorian Calendar.

Bikrami Era - Solar

For determination of tithis and *Sangrand*s (first day of the solar month) the day is considered to begin with the sunrise, as was and still is the practice among the indigenous almanac makers. The length of the solar year of the Bikarmi calendar according to Surya Siddhanta is 365.258756481 days. The modern value for the sidereal year is 365.256363. Both these values are larger than the length of the tropical year which is 365.2422 days.

Many modern indigenous almanac makers realising the errors and deficiencies due to neglect of many terms in the formulas of the Surya Sidhanta, switched over, during the nineteen-sixties, to the formulas as provided by modern astronomical theory. In Punjab, Calendars are produced based on the modern value of the sidereal year, which is different from the Siddhantic value which was in use during the Guru period.

The seasons recur on approximately the same dates in calendars based on the tropical year, but the months go on shifting in seasons if a calendar based on sidereal year is used. The Julian calendar did not have the correct length for its year and resulted in a shift of 1 day in 128 years, while Surya Siddhantic year gave a shift of 1 day in 114 years in relation to the Julian calendar, but of 1 day in 60 years in relation to seasons. The modern sidereal Bikrami year gives a shift of 1 day in 70 / 71 years. This is the reason why all '*Sangrand*s' of the Bikrami calendar occur later and later in seasons with the passage of time. The Western world discontinued ussing the Julian calendar whose rate of shift in seasons was even less than that of the Bikrami calendar - Siddhantic or modern.

The Bikrami solar year begins when the sun enters the first sign *Mekh rasi* and is on the first point of Aries of the Indian zodiac. This point differs from the first point of Aries as defined by western astronomy, the difference (*ayanamsa*) being about 23 degrees 54 minutes and 47 seconds of arc on first of April, 2004 CE. This difference goes on accumulating at the rate of 50.3" per year. In simple language, this means that the dates of the Bikrami calendar have shifted in seasons by about 24 days since the time of zero *ayanamsa* when the starting point of the Indian and the Western Zodiacs coincided. The day for the purpose of calculating tithis and *Sangrand*s (beginning of months in the solar year) is considered from sunrise to next sunrise. The Bikrami new month starts on the day on which the sun moves from one sign of the zodiac to the next. If this event happens after midnight, even though the CE date has changed, it is still shown against the previous CE date because of the sunrise to sunrise definition of day. Therefore, for example, if a *Sangrand* occurs at 2:00 am on 14th April, in calendars it is shown as occurring on 13th April, because the event has happened before the next sunrise.

The CE dates for Vaisakhi or the 1st of Vaisakh of the Bikrami solar year for some periods are as follows:
1469 CE to 1752 CE (Julian) 27 March to 30 March
1753 CE to 1970 CE (Gregorian) 9 April to 13 April
1971 CE to 2000 CE (Gregorian) 13 April to 14 April.
2001 CE to 2101 CE (Gregorian) 13 April to 15 April .
According to Bikrami calendar, in the present cycle, Vaisakhi would occur on 13th April for the last time in 2080 CE.

Bikrami Era - Lunisolar

The lunar year begins on Chet sudi 1, the first day after the new moon in the month of Chet. The average length of lunar month is 29.530589 days. This gives the length of the lunar year as 354.37 days, which is approximately 11 days short of the solar year. This results in the beginning of the next lunar year about 11 days earlier in relation to the solar Bikrami year and the Common Era year. However, when two new moons (amavasyas) occur in the same Bikrami solar month, then an extra lunar month of the same name is added to that lunar year. The extra month is called adhika mas or mal mas (intercalary month). This makes 13 lunar months in that lunar year giving the average length for such years as approximately 384 days. Whenever in a year mal mas occurs, the beginning of the next lunar year happens 18 or 19 days later. This ensures that the same lunar date will fluctuate back and forth within a month, but will never deviate beyond that. This way lunar year stays in step with the solar year. On the average there are 7 adhika months in a period of 19 years. Example of mal mas is the month of Bhadon in 2050 BK (1993 CE).

Rarely it happens that there is no amavasya (new moon) in a Bikrami solar month. In that case that lunar month is dropped, and it is called a khshya month. This would give 11 lunar months in that year, but when this happens there is invariably an adhika (intercalary) month too in the same year, so that the total months in such a year still remains 12. In the present work, for these years both the adhika month and the khshya month are ignored because these are considered to cancel out each other.

The lunar month is divided into two halves, the bright half and the dark half. When the moon waxes from new moon to full moon, it is known as sudi or shukla fortnight. There are 15 sudis (lunar days) from sudi 1 to sudi 15. Sudi 15 is the full moon day or the puranmasi. After full moon the dark fortnight, called the vadi or krishna fortnight, begins. There are 15 vadis (lunar days). Vadi 15, shown as vadi 30 in this Calendar, as is the common practice among indigenous almanac makers, is the amavasya day (new moon). Each of the lunar days is called tithi. On full moon the sun and moon are exactly opposite each other and the difference between their longitude is 180 degrees. Since there are 15 tithis from new moon to full moon, each tithi represents a difference of 12 degrees between the sun and moon. Only the tithi which is current at the time of sunrise is shown. Duration of a tithi varies from 20 hours 15 minutes to 26 hours 47 minutes. Therefore, occasionally same tithi may be current at two consecutive sunrises. In that case that tithi will be shown for 2 consecutive dates. Also, a tithi may begin just after sunrise and end just before next sunrise. In this case that tithi is not current at any sunrise and is not shown, and is called khshya or dropped tithi. In fact both the tithis are assigned to the same date, though only the one which is current at sunrise is shown. So, whenever a tithi appears to be missing it should be assumed to be assigned to the same date as the previous tithi.

Period	Range of CE dates for Chet sudi 1 (Beginning of Bikrami Lunar Year)
1469 - 1568 CE	Feb 27 - Mar 27 Julian
1569 - 1668 CE	Feb 27 - Mar 28 Julian
1669 - 1752 CE	Feb 28 - Mar 29 Julian
1753 - 1868 CE	Mar 11 - Apr 11 Gregorian
1869 - 1968 CE	Mar 13 - Apr 12 Gregorian
1960 - 2000 CE	Mar 14 - Apr 14 Gregorian

The shift in the range of CE dates for the beginning of the lunar year follows similar shift in the range of CE dates for beginning of the solar Bikrami year.
From the date of start of a Bikrami year to 31st December the Bikrami Era is ahead of the Common Era by 57 years, but from 1st January to the last date of the Bikrami year the difference is 56 years.

SAKA ERA (TRADITIONAL)

The month names and the beginning of the year (solar and lunar) are the same as for Bikrami Era except that its year lags Common Era year by 78 years from its beginning date to 31st December; and by 79 years from 1st January to the last date of its year.

SAKA ERA (NATIONAL CALENDAR OF INDIA)

Government of India, on the recommendations of the Calendar Reform Committee, adopted the Saka Era with modifications as its national calendar. The year has 12 months with fixed number of days. The year begins with the month of Chet. The days of months are as follows:

Chaitra 30 days in a common year, 31 days in a leap year
Vaisakha 31 days, Jyaistha 31 days, Asadha 31 days
Sravana 31 days, Bhadra 31 days, Asvina 30 days
Kartika 30 days, Agrahyana 30 days, Pausa 30 days
Magha 30 days, Phalguna 30 days.

The Saka year that starts in a CE leap year will also be a leap year. The year will always begin on 21st March in a leap year and on 22nd March in a common year. This way the months of the Saka Era will maintain constant relationship with those of the CE Era.

The Gregorian dates for the beginning of the 12 months starting from Chaitra are as under:
March 22 in ordinary year, March 21 in a leap year,
Apr 21 May 22 Jun 22 Jul 23 Aug 23 Sep 23
Oct 23 Nov 22 Dec 22 Jan 21 Feb 20.
This modified calendar became effective from 22 March, 1957.

HIJRI CALENDAR

The Hijri calendar is purely a lunar calendar. The era commenced on 1 Muharram / 16 July 622 CE even though prophet Mohammad Sahib (may peace be upon him) had left Mecca for Medina in September of that year. This calendar is in use in Muslim countries along with the Common Era calendar. There are no intercalary months introduced to keep it in step with the seasons. The 12 months in the year may each have 29 or 30 days. No month can have less than 29 or greater than 30 days. The total number of days in the year may vary from 353 to 355. The lunar month begins at the moment of the first visibility of the moon after new moon in the evening sky. However, the first day of the month is considered to start from the next morning. The first visibility of the moon after new moon cannot be predicted with certainty, because the occurrence of this phenomenon depends upon, apart from ephemerides of the sun and the moon, many factors like local atmospheric conditions (cloudiness, dust particles in air, moisture, etc.), latitude of the place, and also the sharpness of the observer's eyesight. Months calculated in this way do not have fixed number of days. Different almanacs sometimes differ by one day on the beginning of a month. The editors of almanacs are aware of this problem and they usually state in their publications that the Hijri dates might be out by 1 day, because of the uncertainty of prediction of the visibility of the crescent moon.

Because the Hijri year is purely a lunar one, its year is shorter than the CE year by 10 to 12 days. Therefore, festival dates that are fixed according to this calendar fall earlier by 10 to 12 days in each succeeding year of the Common Era. Beginning day of the Hijri year makes a complete circle of the Common Era year in 33 CE years, so that there are approximately 34 Hijri years in 33 CE years.

There is also another type of Hijri calendar in use. This has fixed number of days in each month. Starting from Muharram, the first month, months have alternately 30 and 29 days. This gives 354 days to the year. Last month may have 30 days in Hijri leap years. There are 11 leap years in a cycle of 30 years. Leap years have 355 days each. This makes 10631 days in 30 Hijri years. Use of this scheme would result in the calendar being out of step with the crescent moon by 1 day in about 2500 years.

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Nanakshahi Calendar - Gurpurbs and other important dates:

Gurpurbs (Fixed Dates)

Chet / March-April (1 Chet on 14 March, New Year Day)

Gurgaddi Guru Har Rai Sahib - 1 Chet / 14 March
Joti Jot Guru Hargobind Sahib - 6 Chet / 19 March

Vaisakh / April-May (1 Vaisakh on 14 April)

Joti Jot Guru Angad Sahib - 3 Vaisakh / 16 April
Gurgaddi Guru Amardas Sahib - 3 Vaisakh / 16 April
Joti Jot Guru Harkrishan Sahib - 3 Vaisakh / 16 April
Gurgaddi Guru Tegh Bahadur Sahib - 3 Vaisakh / 16 April
Parkash Guru Angad Sahib - 5 Vaisakh / 18 April
----- 500th Parkash Anniversary in 2004 CE
Parkash Guru Tegh Bahadur Sahib - 5 Vaisakh / 18 April
Parkash Guru Arjan Sahib - 19 Vaisakh / 2 May

Jeth / May-June (1 Jeth on 15 May)

Parkash Guru Amardas Sahib - 9 Jeh /23 May
Gurgaddi Guru Hargobind Sahib - 28 Jeth / 11 June

Harh / June-July (1 Harh on 15 June)

Shaheedi Guru Arjan Sahib - 2 Harh / 16 June
Foundation Day Sri Akal Takht Sahib - 18 Harh / 2 July
Parkash Guru Hargobind Sahib - 21 Harh / 5 July

Sawan / July- August (1 Sawan on 16 July)
Miri-Piri Day - 6 Sawan / 21 July
Parkash Guru Harkrishan Sahib - 8 Sawan / 23 July

Bhadon / August-September (1 Bhadon on 16 August)
Completion Guru Granth Sahib - 15 Bhadon / 30 August
First Parkash Guru Granth Sahib - 17 Bhadon / 1 September
-- 400th Parkash Anniversary in 2004 CE

Assu / September-October (1 Assu on 15 September)
Joti Jot Guru Amardas Sahib - 2 Assu / 16 September
Gurgaddi Guru Ramdas Sahib - 2 Assu / 16 September
Joti Jot Guru Ramdas Sahib - 2 Assu / 16 September
Gurgaddi Guru Arjan Sahib - 2 Assu / 16 September
Gurgaddi Guru Angad Sahib - 4 Assu / 18 September
Joti Jot Guru Nanak Sahib - 8 Assu / 22 September
Parkash Guru Ramdas Sahib - 25 Assu / 9 October

Katik / October - November (1 Katik on 15 October)
Joti Jot Guru Har Rai Sahib - 6 Katik / 20 October
Gurgaddi Guru Harkrishan Sahib - 6 Katik / 20 October
Gurgaddi Adi Guru Granth Sahib - 6 Katik / 20 October
Joti Jot Guru Gobind Singh Sahib - 7 Katik / 21 October

Maghar / November - December (1 Maghar 14 November)
Gurgaddi Guru Gobind Singh Sahib - 11 Maghar / 24 November
Shaheedi Day Guru Tegh Bahadur Sahib - 11 Maghar / 24 November

Poh / December - January (1 Poh on 14 December)
Parkash Guru Gobind Singh Sahib - 23 Poh / 5 January

Magh / January - February (1 Magh on 13 January)
Parkash Guru Har Rai Sahib - 19 Magh / 31 January

Phagun / February - March (1 Phagun on 12 February)
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Movable Dates (Change Every Year)

	Hola	Bandi Chhor	Parkash Guru Nanak Sahib
2003	19 Mar	25 Oct	8 Nov
2004	7 Mar	12 Nov	26 Nov
2005	26 Mar	1 Nov	15 Nov
2006	15 Mar	21 Oct	5 Nov
2007	4 Mar	9 Nov	24 Nov
2008	22 Mar	28 Oct	13 Nov
2009	11 Mar	17 Oct	2 Nov
2010	1 Mar	5 Nov	21 Nov
2011	20 Mar	26 Oct	10 Nov
2012	9 Mar	13 Nov	28 Nov
2013	28 Mar	3 Nov	17 Nov
2014	17 Mar	23 Oct	6 Nov
2015	6 Mar	11 Nov	25 Nov
2016	24 Mar	30 Oct	14 Nov

2017	13 Mar	19 Oct	4 Nov
2018	2 Mar	7 Nov	23 Nov
2019	21 Mar	27 Oct	12 Nov
2020	10 Mar	14 Nov	30 Nov

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Other Important Days

Chet

1 Chet / 14 March - Nanakshahi New Year Day
2 Chet / 15 March - S. Baghel Singh's conquest of Delhi
12 Chet / 25 March - Shaheedi Bhai Subeg Singh, Bhai Shahbaz Singh
27 Chet / 9 April - Birthday Sahibzada Jujhar Singh Ji

Vaisakh

1 Vaisakh / 14 April (Vaisakhi) - Birth Anniversary of Khalsa

Jeth

3 Jeth / 17 May - Chhota Ghallughara
21 Jeth / 4 June - 1984 Ghallughara (Attack on Sri Akal Takht Sahib)
23 Jeth / 6 June - Shaheedi Sant Baba Jarnail Singh Ji

Harh

11 Harh / 25 June - Shaheedi Baba Banda Singh Ji Bahadur
15 Harh / 29 June - Barsi Maharaja Ranjit Singh Ji
25 Harh / 9 July - Shaheedi Bhai Mani Singh Ji

Sawan

1 Sawan / 16 July - Shaheedi Bhai Taru Singh Ji
24 Sawan / 8 August - Morcha Guru Ka Bagh

Bhadon

15 Bhadon / 30 August 2004 - Mela Baba Bakala (movable)

Assu

17 Assu / 1 October - Foundation Day Singh Sabha
21 Assu / 5 October - Mela Beerh Baba Buddha Ji

Katik

8 Katik / 22 October 2004 - Khalsa Darbar
14 Katik / 28 October - Foundation Day Chief Khalsa Diwan
14 Katik / 28 October - Saka Panja Sahib
18 Katik / 1 November - Punjabi Suba Day
30 Katik / 13 November - Shaheedi Baba Deep Singh Ji Shaheed

Maghar

1 Maghar / 14 November - Foundation Day SGPC
11 Maghar / 24 November - Shaheedi Bhai Mati Das Ji, and Bhai Sati Das Ji
15 Maghar / 28 November - Birthday Sahibzada Zorawar Singh Ji
19 Maghar / 2 December - Shaheedi Baba Gurbakhsh Singh Ji
29 Maghar / 12 December - Birthday Sahibzada Fateh Singh Ji
30 Maghar / 13 December - Foundation Day Shromani Akali Dal

Poh
8 Poh / 21 December - Shaheedi Sahibzada Ajit Singh, Sahibzada Jujhar Singh ,
and other Shaheeds of Chamkaur Sahib ---- 300th Anniversary
8 Poh / 21 December - Shaheedi Baba Jeevan Singh Ji
9 Poh / 22 December - Shaheedi Bhai Sangat Singh Ji
13 Poh / 26 December - Shaheedi Sahibzada Zorawar Singh, Sahibzada Fateh Singh,
and Mata Gujri Ji---- 300th Anniversary

Magh
1 Magh / 13 January - Mela Maghi Muktsar
1 Magh / 13 January - Foundation Day Sri Harimandar Sahib
7 Magh / 19 January - Morcha for Keys
25 Magh / 6 February - Mela Kottha Sahib
27 Magh / 8 February - Great Holocast
30 Magh / 11 February - Birthday Sahibzada Ajit Singh Ji

Phagun
10 Phagun / 21 February - Saka Nankana Sahib
10 Phagun / 21 February - Jaito Morcha

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Full Moon Dates Jan 2004 to Apr 2005
Jan7, Feb 6, Mar 6, Apr 5, May 4, Jun 3, July 2, and 31, Aug 30,
Sep 28, Oct 28, Nov 26, Dec 26, Jan 25, 2005, Feb 24, Mar 25, Apr 24

New Moon Dates Jan 2004 to Apr 2005
Jan 21, Feb 20, Mar 20, Apr 19, May 19, Jun 17, Jul 17, Aug 16,
Sep 14, Oct 14, Nov 12, Dec 11, Jan 10, 2005 , Feb 8, Mar 10, Apr 8