Why there is a one day difference in hindu festival dates in India and America?

I am sure this question must have arisen in everyone's mind. The above statement is not entirely accurate. We buy indian calendar and because we use english date for our day to day work we try to align the festivals with the English date. There is a basic difference between these two dates. The English date and the day (Sunday, Monday, Tuesday etc..) changes at the midnight where as the hindu date or tithi (the festival falls in to) doesn't change at the midnight, and hindu day also doesn't change at the midnight. Hindu day changes at the sunrise. So we have a day from one sunrise to another sunrise. That's called the hindu day (Sunday, Monday etc...). The hindu date (tithi -- depends on the positions of sun and the moon at any given time) changes at anytime as celestial bodies keep moving. They can change anytime between one sunrise to another sunrise, between one midnight to another midnight. This means if prathama tithi ends today at 23:02 it doesn't mean that dwitiya tithi will end tomorrow at the same time. It can end at 18:00, 18:09 or 28:27 (anytime after 24 means time after midnight but before next day sunrise), or whatever.

Now what's the hindu date?

It's simple tithi is a lunar day, or the time it takes for the longitudinal angle between the moon and the sun to increase by 12Â°. Tithis begin at varying times of day and vary in duration from approximately 19 to approximately 26 hours. So maximum distance between the sun and moon can be 360 degrees. If you divide them by 12 that gives you 30. Means we have 30 dates in hindu calendar. Now there is a bright half (Shukla Paksha, Waxing moon) and the darker half (Krishna Paksha, and the waning moon). Now because this is based on the actual movement of the sun (sun= earth + 180 degrees because the earth rotates around the sun and from the earth sun is exactly opposite and hence 180 degrees are added to the heliocentric position of the earth to arrive at the position of the sun) and the moon they don't necessarily change at the midnight or the sunrise.

Panchangam contains two types of calculations. One based on the local coordinates like longitude and latitude, and the other is based on geocentric astronomical phenomenon / events like planetary positions, Solar or Lunar Eclipse. The first type of calculation is always done for each and every place on the earth. The earth is not flat, and it is kinda round and horizon will vary from place to place on earth. Hence these (first set of) calculation may vary from the place to place. These varying calculations based on local parameters are known as, sunrise, sunset, moonrise etc... and from these things like ascendant (Janma lagna), Rahukalam, Yamagandam, gulikai, durmuhurtham are derived.

The another kind of calculation is based on the some astronomical phenomenon from the center of earth (geocentric). The heavenly bodies are

calculated from the center of the earth and hence they are geocentric. The planetary positions are first calculated from the center of the sun (heliocentric) and then using the spherical trigonometry they are converted to the center of the earth (geocentric). The tithi, nakshatra, yoga and karana and daily planetary positions are based on this set of calculations. These are calculated based on Universal Time (UT). These are astronomical phenomenon it happens instantly at the same moment on the earth and hence thithis, nakshatra will end at the same time / instance all over the world and we have to convert them to the local standard time. When eclipse occurs and it's visible all over the world then one converts that time into their timezone. Some printed panchanga give planetary positions of 5:30 IST. They are basically 0:00 GMT. Some astrologers uses western ephemeris to cast horoscope, they convert the planetary positions to IST and then calculate the planetary position at the time of birth.

The planets don't wait for sunrise or sunset at the particular place. They just keep moving, like earth is moving around the Sun. Hence the distance we call it tithi (quotient or the result of the division = (sun - moon)/12.0) can change at any given time. The reminder is called the remaining time it will take to enter new thithi. So new thithi can change at 6:00 AM, 6:32 AM, or 11:57 PM or any time during the day. There is no fix tithi ending time like english date.

Now these planetary position of the sun and the moon is computed based on the local time (longitude, latitude) converted to GMT time and then Universal Time. The tithi end time is also calculated in the Universal time which is then converted to the local time of the place. That's because planets are calculated from the center of the earth -- Geocentric. Hence, their position at the given time will be same all over the world (After subtracting the time difference). The same way to observe any celestial event occurs we need to convert it to our local time, and also the same way this thithi, nakshatra, yoga and karna positions are same at any given time in the world. So panchang makers convert this to Indian time. The very same say we need to covert it to our time zone for America (PST/PDT, CST/CDT, MST/MDT, EST/EDT). After adding the time difference they'll assign to the resulting english date. Hence, when the calendar is made of india the date they mention is when that tithi will end as per the english date in India. If you take the same date and time use it anywhere in the world as it is, then we have a wrong result because of the time difference.

The time difference between India and London is 5 hours 30 minutes, Time difference between Seattle, WA and India is 13 hours 30 minutes. The planets don't remain static during that time. They keep on moving and hence at the same time and date in different parts of the world we will have a new tithi. But if you add and subtract the time difference from the Indian calendar you'll arrive at the time when that tithi will change in your locality too. Too complex? Let me give you one example.

For example:

October 17th 2008 the Ashwayuja (Ashwin) krishna Paksha / Poornimant Kartik Krishna paksha tithi Tritiya ends at 16:39:21 Indian Standard Time, and chaturthi starts. That means at 16:00 hours there is tritiya still prevailing in India. Now on October 17th 2008 in Seattle, WA at the 16:00 hours we won't have tritiya at that time. We already have chaturthi started why? a) Planets keep on moving.... 13 hours have passed and the position of sun and moon have changed. So what time Tritiya will end in Seattle? The time difference is 13 hours 30 minutes (with one our day light saving time it gives the difference of 12 hours 30 minutes from IST). So, let's subtract 12 hours 30 minutes from the 16:39:21. That gives us 04:09:21 AM on October 17th. So on October 17th after that time we'll have chaturthi tithi and before we have tritiya. The same way if tithi ends at 8:39 AM on Sept 12 in India it will end at 20:09 PM on Sept 11th in Seattle. The same way Western Australia is 8 hours ahead of GMT and hence the chaturthi will end there at 12:09 PM on Sept 12th. The planets don't wait for appropriate tithi to arrive on some english date at any location in the world. If it really did we won't have any days and nights (If it happens then celestial bodies will remain static in sky). The earth is round and it keeps moving, we have days and nights. It doesn't wait for tithi or festivals. Time never waits for anyone. It goes on. The sun doesn't rise instantly at the same time all over the world. Even if it does the earth is round and rotates on it's own axis. Hence we need to convert the tithi, nakshatra, yoga, and karana time to local standard time. Now we know what time a given tithi ends it's a time to decide festival dates for each region.

How festivals are determined?

The usual rule to observe festival is whenever that tithi prevails at the sunrise time. But for certain festivals rules change, for example: Ganesh Chaturthi. Sankathara (Sankshathi chauth) chaturthi, Janmashtami, Mahashivaratri, Karwa Chauth, etc... For example Ganesha chaturthi has to be observed when the chaturthi tithi is observed during the 8th/15 part of the dinmana or the 3/5th part of the dinmana. The dinmana is the difference of local sunset and the sunrise on the same day. If chaturthi is not prevailing during that period then take the second day. **(Continued on Page 4)**

SHSK Temple Foundation Stone Ceremony

SHSK 3rd Annual Gayatri Havan and Kite Festival

January 14, 2017 (Saturday)

110, Hapsburg Lane, Lafayette, LA - 70506

Event Schedule:

8.35 am to 10.30 am - Gayatri Havan

11.01 am to 12.30 pm - Foundation Stone Ceremony

12.30 pm to 2.00 pm - Lunch Box Sale

12.30 pm to 4.00 pm - Kite Festival

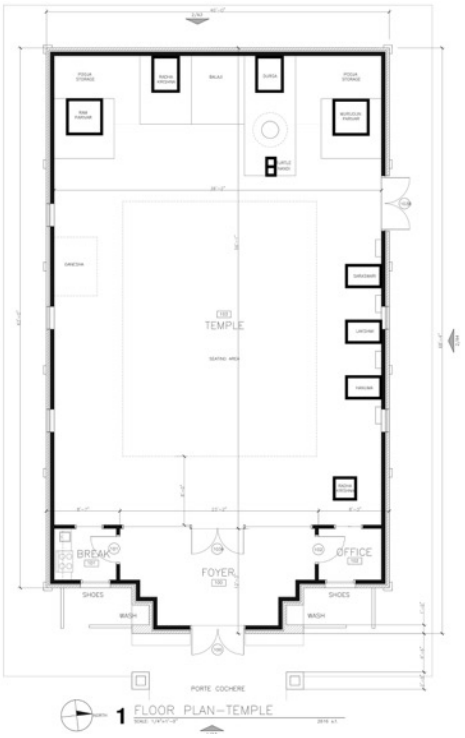
Foundation Stone Locations for the ceremony:

1. 4 corners of the temple building
2. 4 centers of each of the side walls
3. 11 exact locations of each deity (Ganesh, Ram-Sita-Lakshman, Radha-Krishna, Balaji, Durga, Shiva Linga, Murugan-Valli-Devasena, Saraswati, Lakshmi, Hanuman & Nava Graha)

We will try to accommodate as many couples (families) as we can to participate in the foundation stone ceremony as a first call/email/online reserve basis, since there are less than 80 spots available.

Please call - 518.867.6645 or email shskendra@gmail.com to reserve your spot. You can also pay in advance to reserve your spot through mail or online.

1. Foundation Stone Ceremony - $250/- (80 available)
2. Gayatri Havan - $100/- (40 available)



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Likewise for the karwa chauth and the sankathara chaturthi the chaturthi tithi must be prevailing during the moonrise time, if it doesn't prevail then take the day where it prevails during the sunrise. So for example if one thithi is observed at the moonrise time in India it may or may not be observed during the moonrise time on the same day in the different part of the world. It may be very well observed on the previous day if you are in America or the next day if you are in Japan, Fiji, Australia and other countries, depending on the local events like sunrise, moonrise, and time difference. So sometime it may very well could be observed on the same day as the date mentioned in India. Now we have different sunrise times, different sunset, moonrise timings and tithi timings makes need for a separate panchangam for different place.

Muhurtha is another thing alltogether. Which requires combination of Vaar, Tithi, Nakshatra, Yoga, Karana, Local sunrise, local Lagna (rising sign on the eastern horizon -- which keeps

changing every couple of hours as earth rotates on it's own axis it cuts ecliptic on eastern horizon -- This is the first house), etc.... This lagna is always specific to given longitude and latitude. Hence you can't subtract time difference from lagna time in India to arrive the lagna time in foreign country. Timings of lagna will change even in India from place to place and using it in foreign country is out of question even after subtracting time difference. Sun will be always in the first house during the sunrise, during the noon sun will be always in the 10th house, during the sunset always in the 7th house and during midnight sun will be always in the 4th house. So you cannot subtract time difference to arrive at lagna (the 1st house). It will be completely wrong.

Now if panchang makers in India tries to keep each and every place in mind then they will be creating panchanga for every city, town in the world. Who'll buy it? Printing costs etc... So they just make panchang for the one of their city in India. Now given that example even the IST remains same for Kashmir to Kanyakumari and from Kutch to West

Bengal the festival dates could be very well different in certain city. For example for sankathara chaturthi moon rise time is important, same thing for karwa chauth. Now let's take an example: Moonrise in New Delhi on a given date is at 19:36 and in West Bengal, Kolkatta is at 19:25 PM. Now tritiya ends at 19:32 PM IST. So Kolkatta will celebrate karwa chauth/sankathara chaturthi on the next day where as people in New Delhi will celebrate on the same day.

Pandit Mahesh Shastri & Dr. Ramachandra Joisa
Drik Panchang Karta and Panchang Siddhanti-
www.mypanchang.com

January 2017 Dates

Based on Lafayette, Louisiana, US Time

08 Sunday	**Pausha Putrada Ekadashi**
11 Wednesday	**Paush Purnima**
14 Saturday	**Pongal, Makar Sankranti**
15 Sunday	**Sakat Chauth**
23 Monday	**Shattila Ekadashi**
27 Friday	**Mauni Amavas**

For more details please refer DrikPanchang.com

Wish you all Happy and Prosperous 2017

Thank you for your support and blessings.
Srinivasan Ambatipati, Editor