Mahabharat Retold with Scientific Evidences

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Abstract

Entire ancient history, revealed through Vedas and Epics, is capable of being re-constructed scientifically with accuracy by making use of modern scientific tools and technologies, which include planetarium software. The astronomical references of Rigveda could be observed in the sky between 7000 BCE and 5000 BCE, whereas those of Ramayan could be observed sequentially around 5100 BCE. The astronomical references of Mahabharat pertain to the sky views observed sequentially between 3153 BCE and 3102 BCE. For arriving at these dates, following approach & methodology were adopted –

- More than one lakh slokas contained in nine volumes of Mahabharat (Parimal Publications) were scrutinized and astronomical references were extracted sequentially. Only those which were found in Critical Edition as well were identified for sequential dating. All translations were redone with the help of Sanskrit scholars and referring to dictionaries as some of the traditional translations were found to be not fully correct.

- Astronomical references from Sabha parva, VanaParva, Udyog Parva, BhismaParva, Shalya Parva, Shanti Parva, and MausalParva have been dated sequentially by making use of Planetarium software (Fogware). The internal consistency of astronomical dates with the text of Mahabharta was ensured. Astronomical dates calculated by almost all the scholars during last 130 years were analysed with respect and genuine efforts were made to provide the missing links and to make the dating more comprehensive.

- VanaParva of Mahabharat reveals that in Mahabharat days asterisms were being counted from Rohini as equinox was on that. Astronomically there is precession of equinox by one degree in 72 years. Today Spring equinox is in 3rd quarter of PurvaBhadrapad Asterism; thus equinox has moved by more than 5.25 naksatras (Krttika, Bharani, Asvini, Revati, and Uttara Bhadrapada) since this reference in Mahabharata. This means that more than 5040 years (960 X 5.25) have passed. This took our research period for dating of Mahabharata references to 4000 BC – 3000 BC).

- A more accurate translation of all the relevant *slokas* of chapters 2 and 3 of BhishmaParva, had enabled such accurate depiction of sequential sky views, which should be able to set at rest all controversies regarding the dating of Mahabharat war. Sky view of 19th December, 3139 BC, depicting *Magh Shukla Saptami*, a day before Bhishma's demise and of September 14, 3139 BC, depicting all astronomical references of BhishmaParva observed six hours before solar eclipse of Kartik month are most exclusive, which do not get repeated on any other date; not even around 3067 BC, 1792 BC or 1472 BC.

Eleven sequential sky views covering a period of 52 years from 3153 BC to 3101 BC have been generated, using planetarium software (Fogware), which exactly match the descriptions in Mahabharat, are internally consistent and sequentially accurate. Evidences from archaeology, archaeobotany, palynology, oceanography, remote sensing and genetic studies have corroborated this date sequence of events recorded in Mahabharat. The kingdoms which supported Pandavas and Kauravas during Mahabharat war, have been plotted on the Map, which reveals that entire Greater India was involved in this war. This map also certifies the existence of *Bharatvarsha* as a Nation with defined boundaries for more than 5000 Years.

List of some important sequential sky views generated along with the dates on which these are recorded as observed at the time of important events narrated in Mahabharat is given below. The list contains dates of Planetarium and Stellarium Skyviews and relevant references of Mahabharat text. References are from 'Mahabharat' of Parimal Prakashan (2008 Edition) translated by M N Dutt, edited by Dr. Ishwar Chandra Sharma and Dr. O N Bimali; all these are also included in critical edition 'The Mahabharat' by Vishnu S. Sukthankar. The reasons for certain discrepancies like observation of Solar Eclipse during night time or difference of 26 days in Stellarium and Planetarium skyviews have been given below this list.

Dates of Planetarium and Stellarium depicting the same skyviews	**Astronomical Reference in Mahabharat**	**Description of Event at the time of Sky view**
Planetarium: Nov. 18, 3153 BCE, 23:50 hrs. / Hastinapur (Meerut) Stellarium: Dec. 15, 3153 BCE, 01:42 hrs.	Mahabharat Sabha Parva 2/80/29	Solar eclipse observed when Pandavas were leaving Hastinapur for 13 years of exile after losing in the game of dice. War started after 14 years appx.
Planetarium: Aug. 31, 3139 BCE, 11:10 hrs. / Hastinapur Stellarium: Sep. 27, 3139 BCE, 12:42 hrs./ Hastinapur	Bhishma parva 6/2/23	Lunar eclipse on first Purnima of Kartik Month, followed by solar eclipse within 14 days; foreboding widespread destruction before war
Planetarium: Sep. 14, 3139 BCE 22:15 hrs. / Hastinapur Stellarium: Oct. 11, 3139 BCE, 01:50 hrs / Hastinapur	Bhishma parva 6/2/23 & 6/3/28-32	Near Solar eclipse observed within 14 days of lunar eclipse in Kartik month. There was tithikshaya on 12th September as on 11th September phase difference between the positions of Sun and Moon becoming integral of multiple of 12 at the time of Sunrise on Ekadashi ie.e 11th September was 10.902 whereas on next day it was 12.08. Thus there was tithikshaya of dwadashi and next day was tryodashi. On next *Amavasya of Margshisha month*, Mahabharat war actually started.
Planetarium: Sept. 14, 3139 BCE 18:20 hrs. / Hastinapur	Bhishma parva. 6/3/14 -18	On 14th September, almost all the positions of stars and planets, described in chapter 3 of Bhishma Parva, could be observed in the sky. Mars entering its own house Aries in Vakragati, Saturn in Scorpius is afflicting 10th

Stellarium: Oct. 10, 3139 BCE, 19:50 hrs / Hastinapur		constellation Uttarphalguni in Leo. Venus in Virgo is aspecting Poorva Bhadrapad and Uttarbhadrapad in seventh constellation Pisces. Both Sun and Moon in Scorpious are afflicting Rohini in Taurus, Venus is between Chitra and Swati whereas Shrawan is going around Shrawan in Brahmrashi i.e. Capricornus.
Planetarium: Sep. 25, 3139 BCE, 6:10 hrs. Dwarka Stellarium: Oct. 22. 3139 BCE, 00:30 hrs.	Udyog Parva 5/83/6-7	Lord Krishna leaves for last peace mission in Kartika month, Revati Nakshtra. He leaves from Dwarka and takes about three days to reach Hastinapur.
Planetarium: Oct. 3. 3139 BC, 6:10 hrs. / Hastinapur Stellarium: Oct. 30, 3139 BC, 5:30 hrs	Shalya Parva 9/34/5-6,	After failure of Krishna's peace mission, Balram leaves for pilgrimage in PushyaNakshtra. 3-4 days later, Krishna tells Karna that war could begin on next Amavasya.
Oct. 13, 3139 BCE, 8:30 hrs. / Hastinapur Stellarium: Nov. 9, 3139 BCE, 6:15 hrs	Udyog Parva 5/142/17-18	Shri Krishna imparts Gita-updesh to Arjun. This is Amavasya after 13 days of last Kartik Purnima, moon near Jyeshta, which is presided over by Lord Indra (Scorpius / vrishchika). War started after the failure of Sri Krishan's last peace mission.
Nov. 14, 3139 BCE 06:50 hrs. / Kurukshetra Stellarium: Dec. 10, 3139 BCE, 06:15 hrs	Shalya Parva 9/34/5-7	With Shalya's fall war came to an end on 31st October. Duryodhan went into hiding in Dvaipayana lake. Pandavas could locate him only after 12-13 days. Balram comes back after 42 days in Shravana Nakshatra. Duryodhana gets killed in Gadayuddha with Bhim
Dec. 19, 3139 BCE 07:20 hrs. / Kurukshetra Stellarium: Jan 14, 3138 BCE, 15:00 hrs	Anushasan Parva 13/167/26-28	Occurrence of Winter Solstice on Magh Shukla Saptmi. Next day on Magh Ashtami was Bhishma's demise. This was 68th day after beginning of the war on 13thOct.
March 3, 3102 BCE 10:30 hrs. / Dwarka Stellarium: March 29, 3102 BCE 14:35 hrs.	Mausala parva 16/2/18-19	Solar Eclipse on 13th tithi after Purnima again in the 36th year of war indicating; annihilation of Yadavas and destruction of Dwarka, proving Gandhari's curse true
Jan. 20, 3101 BC 9:15 hrs / New Delhi *Stellarium:* *Feb. 15, 3101 BC 15:00 hrs*	*Sabha Parva 2/1//19-91;* *Dasagitika/3*	*Spectacular assemblage of Sun, Moon & Five Planets around Aries when Kali era Began 37 years after the Mahabharat war*

{[Note: Readers may ask a very pertinent question: why lunar eclipses are being shown during day time whereas solar eclipses are being depicted during night time when Sun is not even above the horizon. NASA has provided a very convincing answer to this question (https://eclipse.gsfc.nasa.gov/SEhelp/uncertainty2004.html). NASA Eclipse Skyguide has

given chart of uncertainties in DeltaT i.e. ΔT, clearly stating that there are bound to be inaccuracies in depicting the timings and longitudes of eclipse paths which occurred prior to 1600 CE. Based on the chart prepared by Morrison and Stephenson, a series of parabolic expressions have been derived, estimating uncertainties of time or in the longitudes of eclipse paths which occurred during the interval 2000 BCE to 3000 CE.

Table 3 - Uncertainty of ΔT (estimated)		
Year	σ (seconds)	Longitude
-4000	16291	67.9°
-3500	12378	51.6°
-3000	8978	37.4°
-2500	6094	25.4°
-2000	3732	15.6°
-1500	1900	7.9°
-1000	622	2.6°

Thus an eclipse which occurred 4000 years back, the software could depict the same up to time difference of 16291 seconds i.e. 11: 31 hrs. Thus solar eclipses of Mahabharat times listed above, which software is depicting during night time, might have actually been observed during the day time and lunar eclipses listed above in daytime, might have been actually been observed during night time. DeltaT is the difference between Terrestrial Time and Universal Time (Rotational time), which have been adopted as fixed as per certain norms. However, actually the Universal time can vary on several occasions due to several factors like earthquakes, high tides, volcanic eruptions etc.

SAO/NASA Astrophysics Data System has also recorded the observations that Moon displays oscillations from two unknown sources, one within a period between 250-300 years with a co-efficient of 15” to 20” and the other within a period between 60 to 70 years with a co-efficient of some 3”. These and many other factors, like the mean latitude of the Moon may not be zero, might lead to differences in observations of eclipses recorded thousands of years back and theoretical recordings based on fixed and pre-determined parameters. Therefore it is possible that Solar Eclipse on 14th September, 3139 BCE was actually observed at that time, but the software displays the Moon going from near the Sun.

It will not be out of place to mention that Stellarium displays all these skyviews 26 Days later (+/- one day). This difference is due to non adjustment of 1 day for 131 years for pre-Gregorian reform period (3425/131=26) by Planetarium software.**]}**

FULL PAPER

Mahabharat Retold with Scientific Evidences

Did Lord Krishna actually recite the profound philosophy of Gita to Arjun from the battlefield of Kurukshetra? Did the land of Kurukshetra actually turn red with the blood of millions of warriors who were killed during that historic war? If yes, then where, when and in which year?

About 5200 years back Vichitravirya, the son of Raja Shantanu, was coronated as the king of Hastinapur. He was married to Ambika and Ambalika, two daughters of King Kashiraj. Vichitravirya thereafter died very soon. In order to save the Kuru Dynasty from extinction and with the permission of mother Satyavati, Ambika bore a son through Sage Vyas, who is named as Dhritarashtra whereas Ambalika bore a son named Pandu.

Since Dhritarashtra was blind from birth, he was considered unfit for the throne; therefore, Pandu was coronated as the king of Hastinapur. For this reason, Dhritarashtra nurtured resentment against Pandu from the very beginning. King Pandu expanded the boundaries of Kuru kingdom through multiple victories but there after he handed over the throne to Dhritarashtra and went to the forest to live the life of an ascetic along with his two wives Kunti and Madri. King Pandu was blessed with five sons – Yudhisthir, Bhim, Arjun, Nakul & Sahadev. Dhritarashtra was married to Gandhari who gave birth to many sons; the eldest was named Duryodhan.

Maharishi Dronacharya was appointed as the teacher for both Kuru and Pandu princes. For doing well in every competition, Pandava princes were generally appreciated; this generated a lot of jealousy in the hearts of Kuru princes. For this very reason, Duryodhan attempted to kill Pandu princes through deceit but all such attempts remained unsuccessful. Since Yudhisthir was the eldest of Pandu and Kuru princes and was also very accomplished, talented and admired by the public, he was declared as the Crown Prince of Hastinapur.

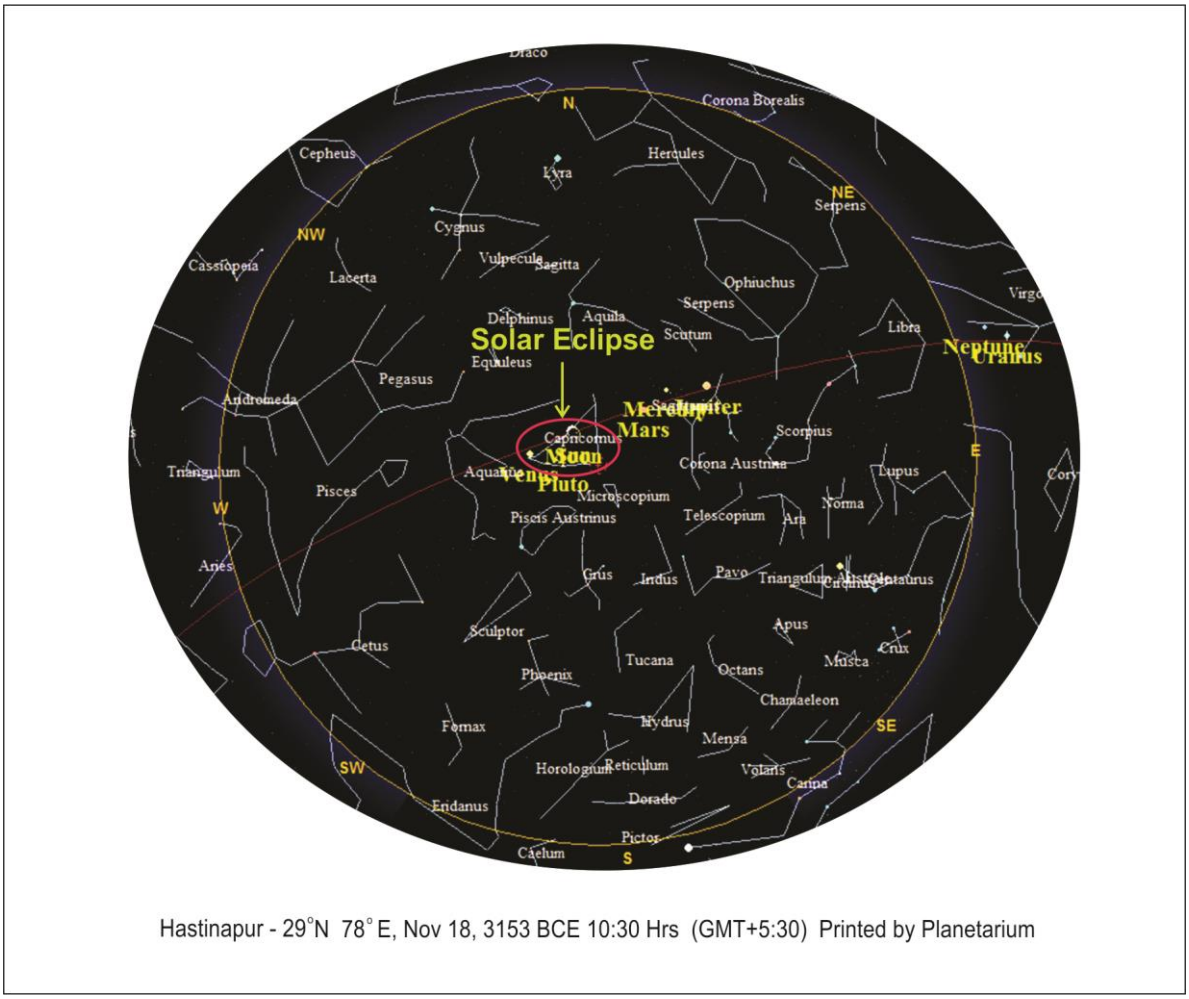
Out of jealousy and frustration, Duryodhan and his Shakuni mama hatched a conspiracy to send all Pandavas to Varanavat and then burn them alive in Lakshagrih i.e. a house built with highly inflammable material by Purochan. However, Pandavas saved their lives by escaping through a tunnel alongwith mother Kunti. They reached EkchakraNagri and started living with a Brahmin. After some years, Pandavas went to participate in the Swayamvara of Draupadi, the princess of Panchala. Her brother, Dhrishtadyumna had announced that anyone who shoots the target with the five arrows through the five holes of the Yantra over which the target was kept would have Draupadi as his wife. Arjun won the archery contest and won Draupadi as his wife. On reaching Ekchakra Nagri, Arjun announced to his mother that he

had won the "prize," Kunti told him to share that prize with his brothers, without seeing Draupadi. Like an irrevocable vow, her statement, even by mistake, could not be undone, so all five brothers married Draupadi, the daughter of King Drupada.

Back in Hastinapur, Dhritarashtra had declared Duryodhan as the Crown Prince presuming that all Pandav brothers had died along with their mother Kunti in Varanavat Lakshagrih. After learning about Pandav's victory during Draupadi Swayamvara, Dhritarashtra invited them to Hastinapur along with their mother Kunti and wife Draupadi. On being persuaded by Bhishma Pitamah and King Dhritarashtra, Duryodhan handed over deserted region of Khandav Van as half the kingdom to Yudhisthir, who accepted the offer in the hope of averting a war. Thereafter, with the help of Vishvakarma and Maya Danav, the Pandav brothers built a great city named Indraprastha along with its grand palace.

Duryodhan could not digest this prosperity of Pandavas; he invited them to a game of dice with the intention of winning their kingdom through deceit. Yudhisthir lost everything, his wealth, his kingdom and even Draupadi in this game of dice. Dushasan dragged Draupadi in to Kuru Darbar, Karna, still stinging from his rejection at the *swayamvara*, called her a harlot who serviced five men. Enraged at this treatment of his wife, Bhim vowed that he would one day drink Dushasan's blood and break Duryodhan's thigh. The wicked Kauravas even tried to disrobe Draupadi in front of the entire Raj Darbar, but her honour was saved by Lord Krishna who miraculously created lengths of cloth to replace the ones being removed.

After having lost in the game of dice, the Pandav brothers were required to go into exile for 12 years, and live incognito in the 13th year; if discovered by the Kauravas, they would be sent into exile for another 12 years. As they were leaving Hastinapur, there were many ill omens and a solar eclipse was also seen. References are in Sarga 80 of Sabha Parva (2/80/29). This eclipse was seen on 18th Nov. 3153 BC (23: 50 hrs) from Hastinapur –

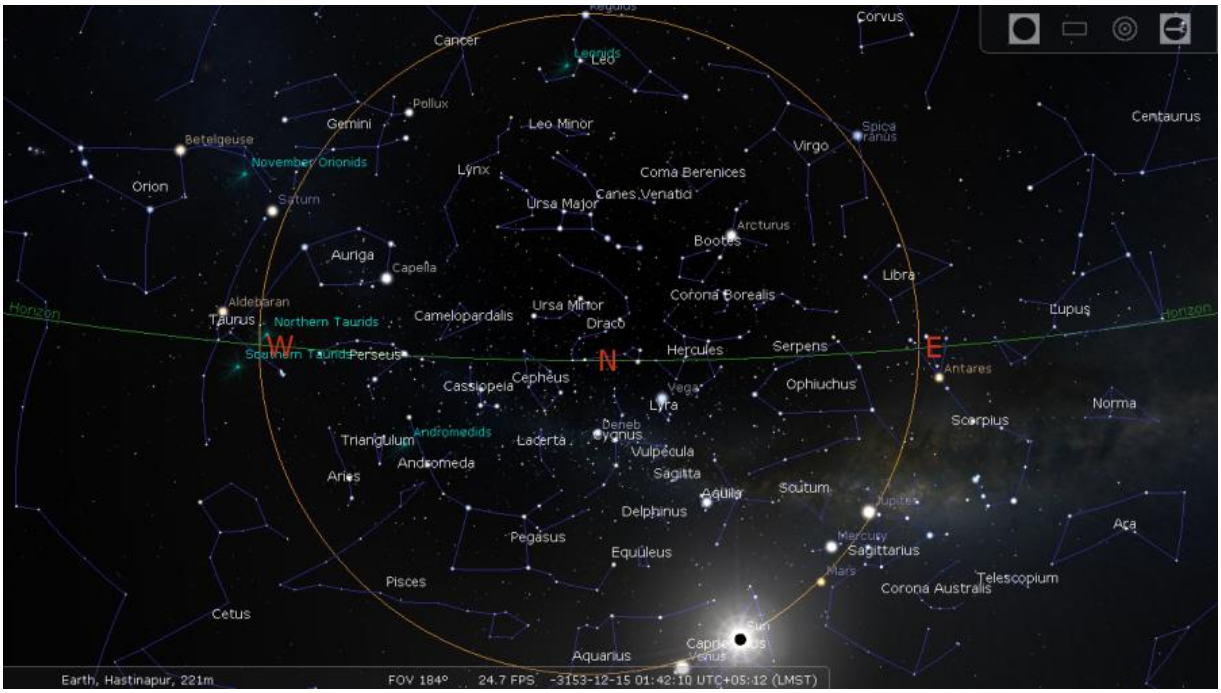


Hastinapur - 29°N 78° E, Nov 18, 3153 BCE 10:30 Hrs (GMT+5:30) Printed by Planetarium

Solar eclipse as seen on 18th November, 3153 BC (23:50 hrs) from Hastinapur (29°N, 77°E)
As per planetarium

	RA	Declination
Sun	15h 48.8m	-20˚01’ / 20.02˚
Moon	15h 48.5m	-20˚20’ / 20.33˚

This very sky and the Solar Eclipse are displayed by Stellarium 27 days later on Dec. 15, 3153 BCE, 01:42 hrs from Hastinapur -



Corresponding view of *Stellarium* (Version 0.15.2 using VSOP87/ELP2000-82B ephemeris)

The Pandavas first went to Kamyaka forest, where Lord Krishna, King Drupad, and Draupadi's brother Dhristadyumna expressed their outrage at the humiliation of Draupadi in Kuru Court and they all pledged revenge and re-installation of Dharmaraja Yudhisthir on the throne. **Thereafter, Pandavas moved into Dvyaitavana and built their hermitage, where Rishi Markandeya consoled them by narrating the story of Ramayan; comparing sufferings of Yudhishthir with that of Lord Ram, sacrifices of his four brothers with those of Lakshman and troubles of Draupadi with those of Sita.** Draupadi and Bhim were sore and angry and made every effort to provoke Yudhishthira to take revenge from Kauravas but were unable to convince him.

Pandavas, thereafter, returned to Kamyaka forest. After a briefing from Sage Vyasa, Yudhishthir told Arjun "all four branches of weaponry have been mastered by Bhishma, Drona, Kripa, Karna and Ashvatthama, who being on the side of Duryodhana have made him invincible. Therefore, only celestial weapons obtained from Indra can provide us victory." Great warrior Arjun quickly left with the resolve to secure these weapons. He crossed Himalayas, and thereafter he crossed Gandhamadan Parvat and obtained the divine weapons with the blessings of Lord Indra and Lord Shiva. Bright, brilliant and even more powerful Arjun came back and narrated the story of his adventures to Yudhishthira.

All the Pandav brothers with Draupadi moved back to Dvaitavan, where Duryodhana and Karna came to enjoy the sight of Pandavas living in miserable conditions. But instead, Karna was defeated by Gandharvas, who also captured Duryodhana. On being so ordered by Yudhishthira, Pandavas defeated Gandharvas and rescued Duryodhana. Duryodhana boiled with anger at this humiliation.

Thereafter, one day king Jayadratha, husband of Duryodhana's sister Dushala, came suddenly and forcibly abducted Draupadi in his chariot. Bhim and Arjun chased him, defeated him, and rescued Draupadi. Back in the hermitage, Sage Markandeya consoled Yudhishthir by narrating the story of abduction of Sita by Ravana; Lord Ram had killed Ravana and rescued Sitaji. Rishi Markandeya assured that troubles of Yudhishthir would also soon be over and he would rule as the king of Hastinapur.

During these twelve years of exile; there were many more adventures and many alliances were also made for a possible future battle. According to the conditions of the game of dice, the thirteenth year, which the Pandavas were to spend in disguise had now arrived. They went to the court of King Virata of Matsya Kingdom. Yudhishthir presented himself as a poor Brahmin, his brothers and Draupadi as wandering servants; they all found refuge at the court of King Virata. Towards the end of 13th year of living incognito and presuming that Pandavas might be hiding in Viratanagar, Duryodhan launched an attack on Virata's kingdom. The king entrusted his troops to his young son who needed a chariot driver. Accepting Draupadi's suggestion, prince Uttar took Arjun as his charioteer. Arjun defeated Duryodhan's forces and repulsed the attack on Virat's kingdom.

After this Victory, the true identity of Pandavas got revealed. Consequently King Virata offered his daughter Uttara's hand to Abhimanyu, son of Arjun through Subhadra, sister of Lord Krishna. The wedding was celebrated in style. The kings from all over the Indian sub-continent assembled in Viratanagar to attend this marriage. Apprehending that Duryodhana would not give back their kingdom to Pandavas, this occasion was also used to build alliances for augmenting military power in case war became inevitable.

Duryodhan refused to give their kingdom back to Pandavas, claiming that Arjun was identified one day before the completion of 13th year but neither Bhishma Pitamah nor Guru Drona agreed with him. Duryodhan even rejected Lord Krishna's proposal of giving them only five villages. The war thus became imminent and all efforts made to prevent war had failed. There are several references to dhoomketus, ulkapats, eclipses which forebode widespread destruction. There is a reference to very inauspicious lunar eclipse on Kartika Purnima followed by a solar eclipse on Kartika Amavasya as per *Sargas* two and three of Bhishma Parva (6/2/23, 6/3/14-18). This lunar eclipse was seen from Hastinapur (29^{o} N, 77^{o} E) on 31st August 3139 B.C. (11:10 hrs) on the first Purnima of Kartika month –

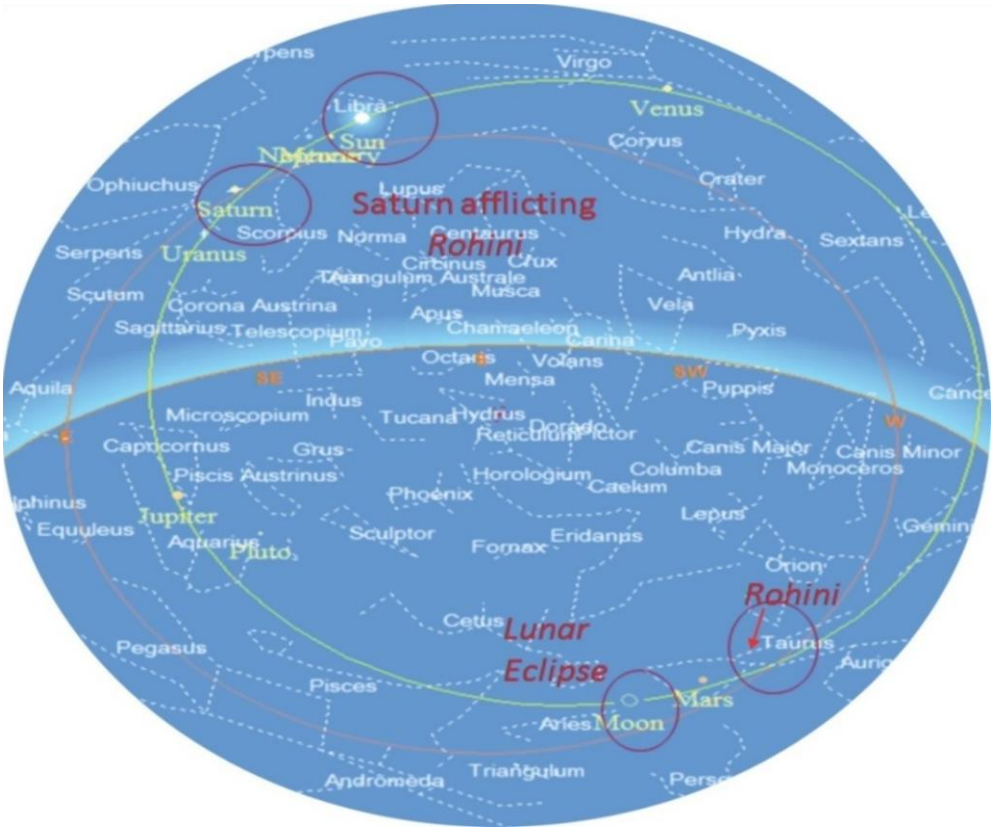
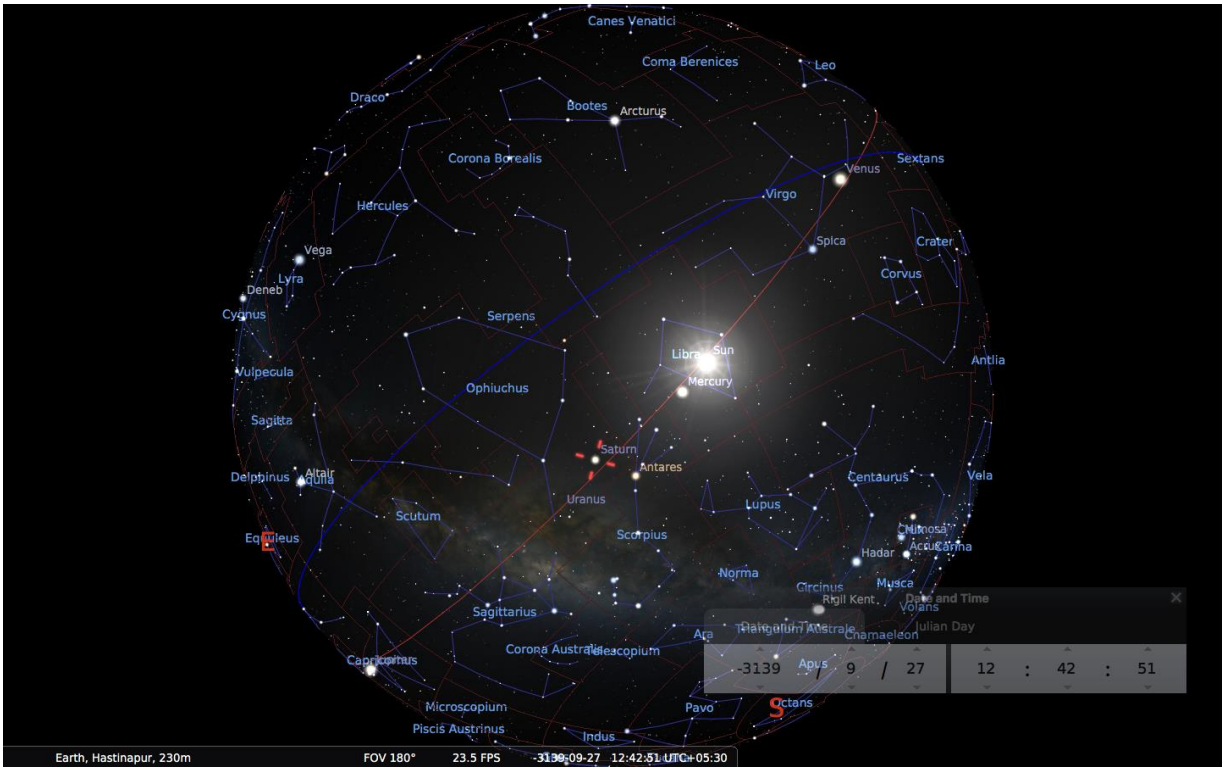


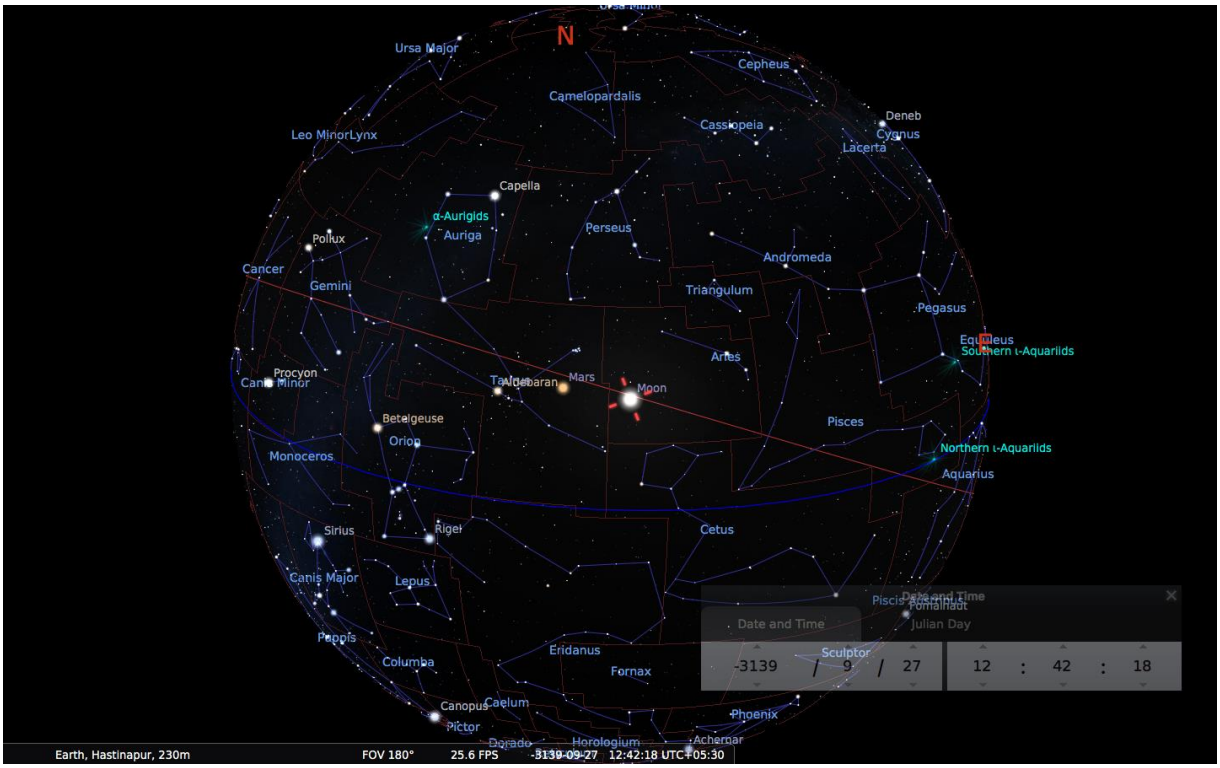
Figure 1: Lunar eclipse as seen from Hastinapur (29°N, 77°E) on 31st August 3139 B.C. (11:10 hrs) on the first Purnima of Kartika month

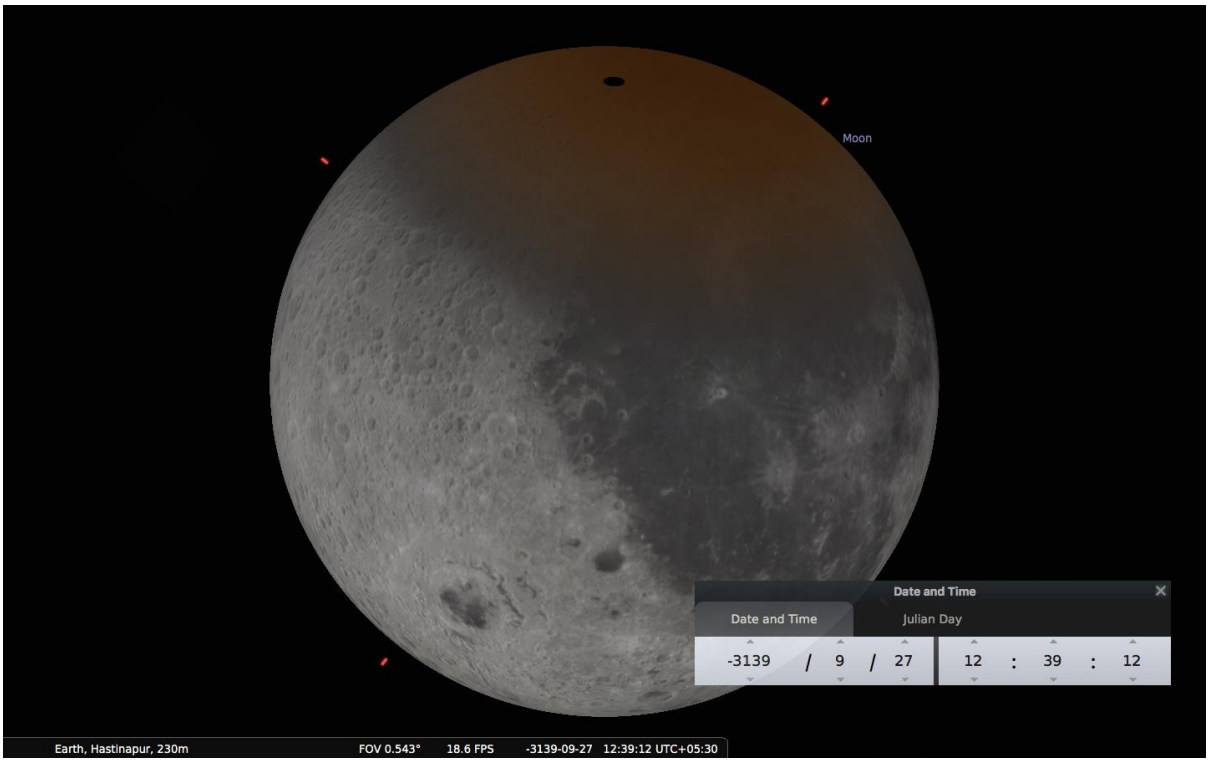
As per planetarium

	RA	Declination
Sun	10h 41.8m	+8˚15’ / 20.25˚
Moon	22h 40.9m	-9˚14’ / 20.23˚

Corresponding view generated using *Stellarium (*version 0.15.2 using NASA JPL DE431 ephemeris) is given below. Because of the constraints of this software, this eclipse is shown through three slides, with Sun and Moon at 180° distance and shadow of Earth on Moon shown by expanding the view.


Canes Venatici
Coma Berenices
Leo
Draco
Bootes
Arcturus
Corona Borealis
Sextans
Venus
Virgo
Hercules
Spica
Crater
Vega
Corvus
Lyra
Deneb
Cygnus
Serpens
Libra
Sun
Antlia
Vulpecula
Mercury
Ophiuchus
Sagitta
Saturn
Antares
Delphinus
Altair
Aquila
Centaurus
Vela
Uranus
Lupus
Scutum
Scorpius
Equuleus
Hadar
Norma
Circinus
Musca
Rigil Kent.
Sagittarius
Triangulum Australe
Chamaeleon
Ara
Corona Australis
Telescopium
Capricornus
Apus
Microscopium
Pavo
Octans
Piscis Austrinus
Indus
Earth, Hastinapur, 230m
FOV 180°
23.5 FPS
-3139-09-27 12:42:51 UTC+05:30


N
Ursa Major
Cepheus
Camelopardalis
Leo Minor
Lynx
Cassiopeia
Deneb
Cygnus
Lacerta
Capella
α-Aurigids
Auriga
Perseus
Pollux
Andromeda
Cancer
Gemini
Triangulum
Pegasus
Equuleus
Southern ι-Aquariids
Procyon
Canis Minor
Aries
Taurus
Aldebaran
Mars
Moon
Betelgeuse
Orion
Pisces
Monoceros
Northern ι-Aquariids
Aquarius
Sirius
Rigel
Cetus
Canis Major
Lepus
Puppis
Eridanus
Sculptor
Columba
Fornax
Canopus
Caelum
Phoenix
Pictor
Dorado
Horologium
Achernar
Earth, Hastinapur, 230m
FOV 180°
25.6 FPS
-3139-09-27 12:42:18 UTC+05:30



On 14th September 3139 BCE, on Kartika Amavasya day a solar eclipse was also observed from Hastinapur. This was 14th lunar tithi as there was *tithikshaya* on 12th September i.e *Dwadashi*. Reference here be also made to 6/3/32, which states that a lunar fortnight has hitherto consisted of 14 days or 15 days or even of 16 days, but on the 13th day and in the course of same month two eclipses have taken place. The sky-view generated depicts a near solar eclipse view of 14th September, 3139 BCE (22:15 hrs.) from Hastinapur (29° N, 77° E). Stellarium displays the corresponding sky view of this near solar eclipse on 11th October, 3139 BCE at 01:50 hrs. The reasons for the two softwares displaying the Solar Eclipses at night time and Lunar Eclipses at day time have been explained in the end of this Paper, along with reasons for difference of 26 days (+/- 1 day) in Stellarium and Planetarium Skyviews. These reasons are given below the Astronomical Dates sequence chart of Mahabharat references, appended in the end.

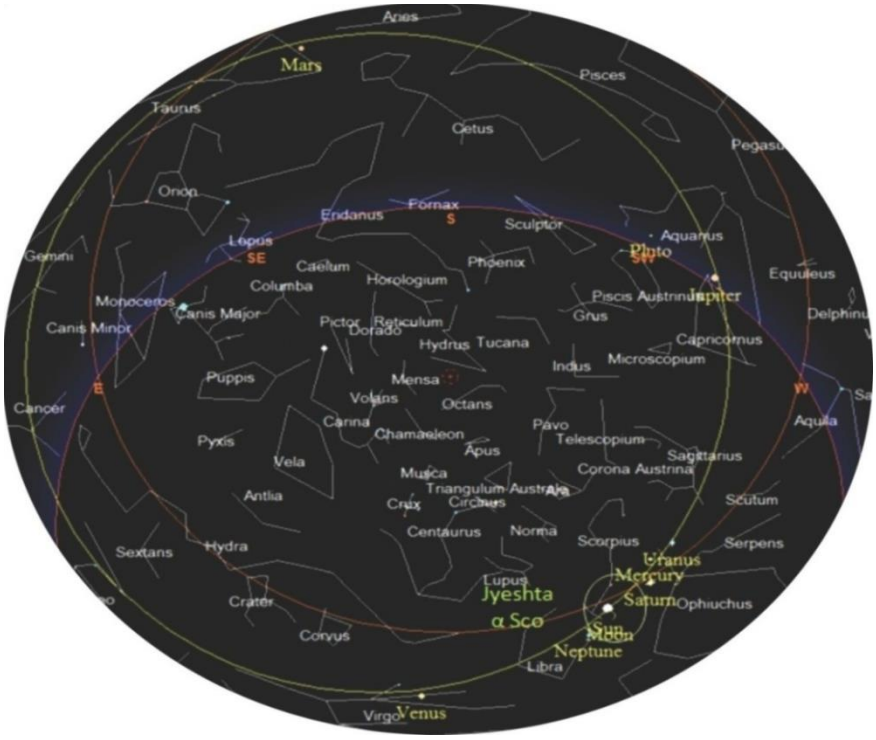
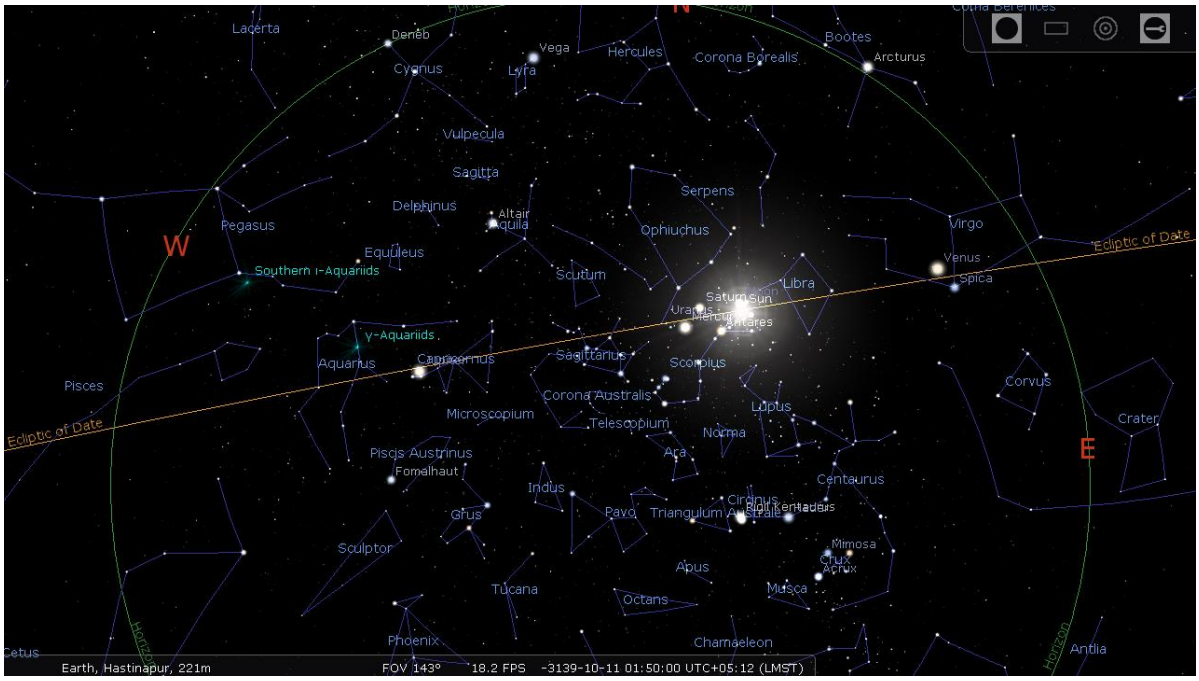
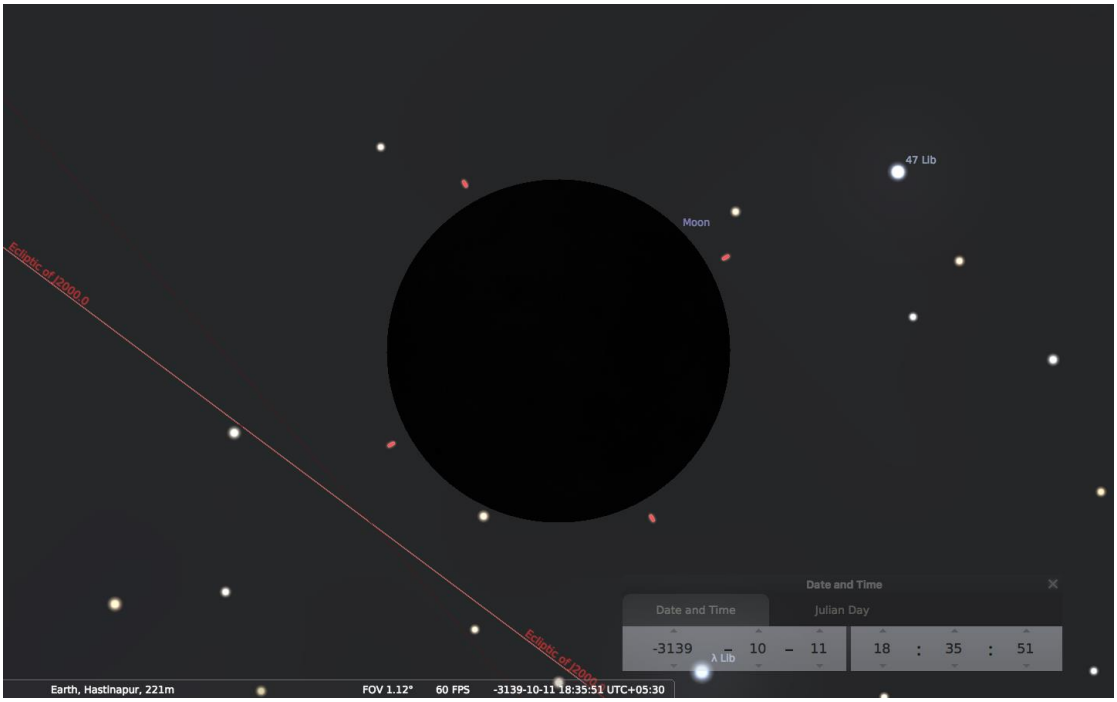


Figure 2: Sky-view depicting a near solar eclipse on 14th September, 3139 BC (22:15 hrs.) from Hastinapur (29°N, 77°E)

Given below is the Corresponding Sky view generated using *Stellarium 0.15.2* using VSOP87/ELP2000-82B ephemeris, displaying the same sky view of near Solar Eclipse on 11.10.3139 BCE. A magnified view of the Moon depicting that it was a no-Moon day is also given below. *Stellarium* otherwise does not clearly render the phases of the Moon in the normal view.





In Sarga 3 of Bhishma Parva, there are comprehensive details of locations and movements of various Planets and Nakshatras just before the solar eclipse. All these positions could be exactly observed in the sky sometime before Kartik Amavasya on 14th September, 3139 BCE at 18:20 hrs. from Hastinapur (29°N, 77°E). The positions as narrated in Mahabharat are summarized as under –

• 6/3/14 – M*angal* (Mars) is comfortable (i.e. magh) entering its own house i.e. *mesha*(Aries) in *Vakra*-gati (in backward motion) as it was in Tauras before 13th Sept. 3139 BCE. *Brihaspati (Jupiter*) is in *Shravan Nakshtra* (in Capricornus). Sun's offspring Shani (Saturn) is in Scorpius and is thus aspecting *Bhagham* i.e. *Uttar Phalguni* (in Leo) which is 10th constellation from Scorpius and is therefore in full aspect of Saturn.

• 6/3/15 - Shining brilliantly, the planet Shukra (Venus) is aspecting Poorva Bhadrapada & there after Uttara Bhadrapada (both in Pisces). On 14th Sep 3139 BC, Venus is situated in *Kanya* (Virgo) and is thus aspecting 7th constellation from its location i.e. *Meena Rashi* (Pisces).

• 6/3/17 - Both Sun and moon are located in Scorpius, therefore they are afflicting *Rohini* (located just opposite in Taurus). *Parush Graha* i.e. *Shukra*(Venus) is located between between *Chitra* & *Swati* Asterisms and is thus located between *Kanya* (Virgo Constellation) and Tula (Libra).

• 6/3/18 - *Brihspati* i.e. Jupiter (Pavakprabha) is going around *Shravana in* Brahmraashi i.e. *Makar Rashi* (Capricornus); whereas *Lohitang i.e.Mangal* (Mars) in *Vakra-anuvakra g*ati (backward-forward motion) is looking stable/static in its own house.

All these astronomical positions are displayed in the sky by Planetarium software on 14th September, 3139 BCE at 18:30 hrs from Hastinapur. Stellarium displays these 26 days later.

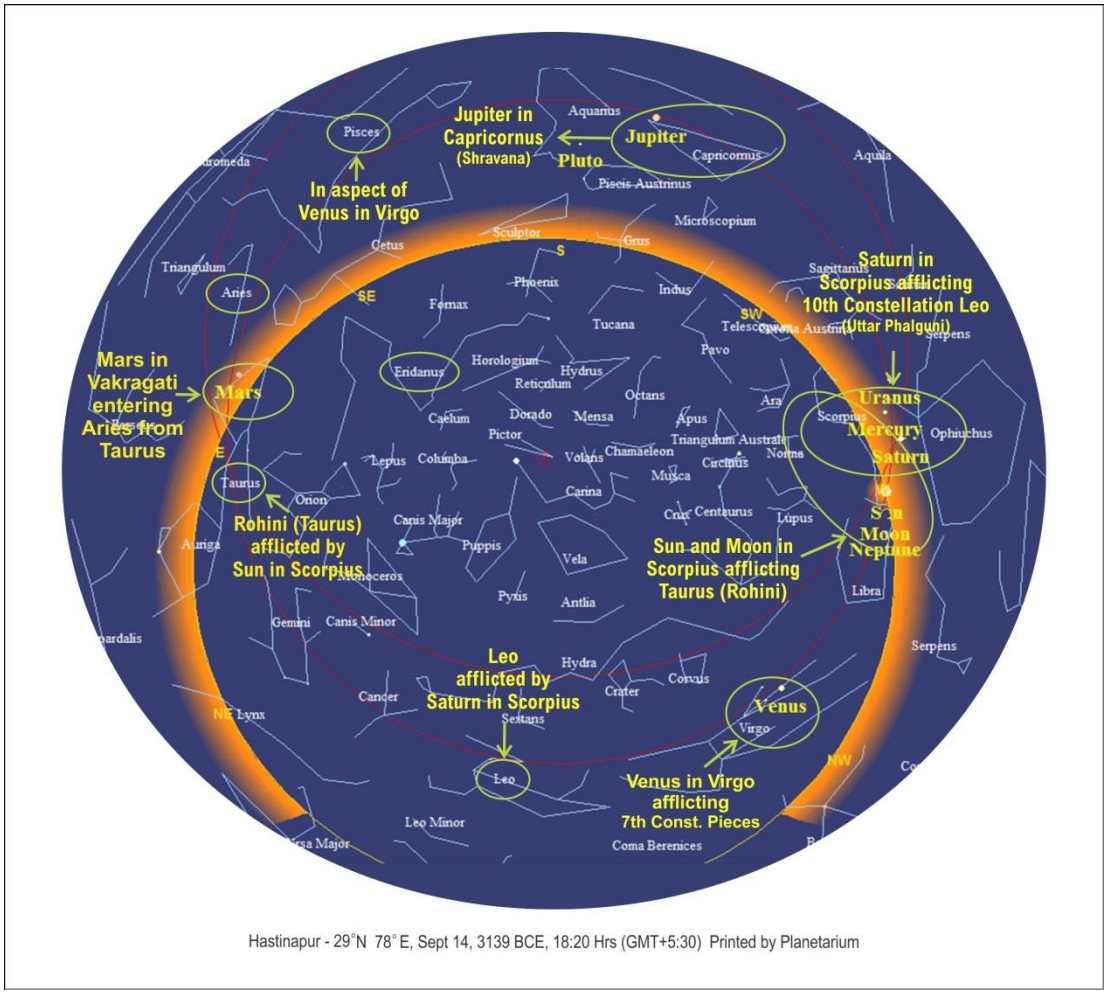
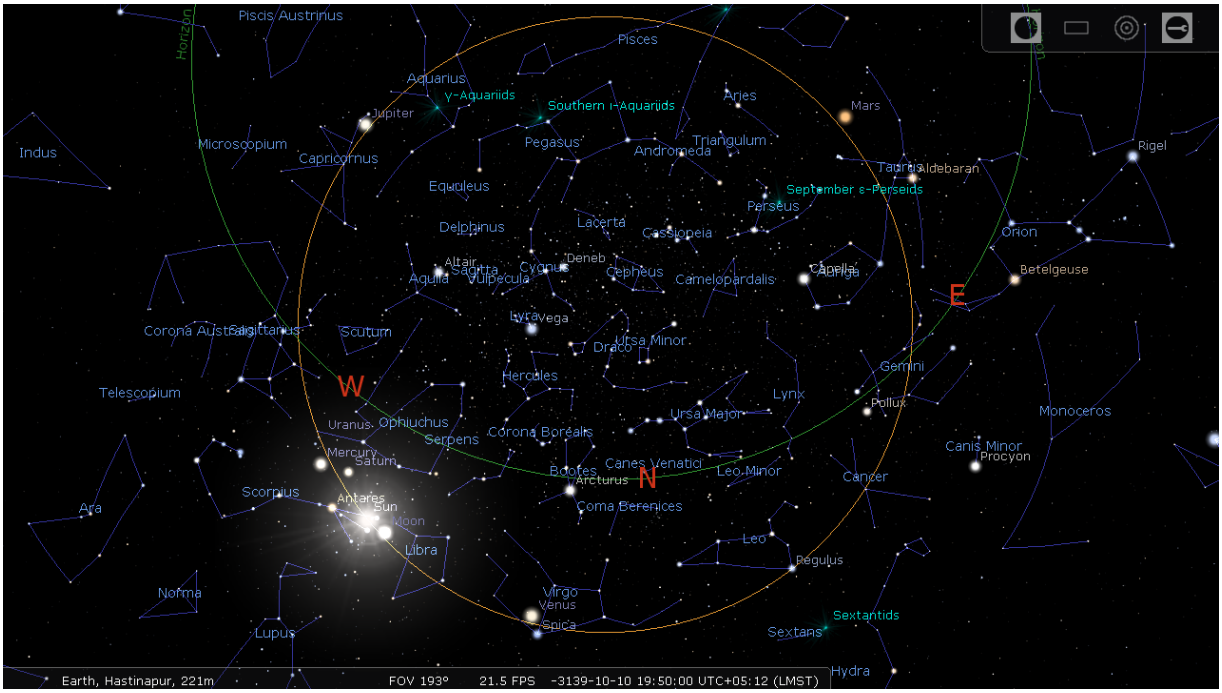


Figure 4: Planetary positions as seen in the sky on 14th September, 3139 BCE (18:20 hrs.) from Hastinapur (29°N, 77°E) - Planetarium

The corresponding sky view generated using Stellarium, displaying all these positions 26 days later on 10th October 3139 BCE, is reproduced below



Corresponding view generated from *Stellarium 0.15.2* using VSOP87/ELP2000-82B ephemeris

This sky view is exclusive and it does not get repeated in or around 5561 BCE, 3067 BCE, in 1792 BCE or in 1478 BCE; for this reason the date of war in 3139 BC appears to be almost indisputable. There is a lunar eclipse on first Kartik Purnima on 31 Aug 3139 BC followed by a near solar eclipse on 14th Sep 3139 BC on Kartik Amavasya; all the above stated planetary positions could be observed some time before Kartik No Moon day.

Eleven *Akshauhini Sena* of Duryodhana and *Seven Akshauhini Sena* of Yudhisthir had by now assembled in Kurukshetra. Duryodhana wanted to start the war in Pushya Nakshtra i.e. 3rd October, 3139 B.C. However, in the meantime in the month of Kartika, after the end of autumn season and beginning of winter season *(Hemant Ritu)*, Shri Krishna left Dwarka for Hastinapur on his last peace mission in *Revati* Nakshtra (5/83/6-7). See the sky-view on 25th September 3139 BCE at 6:20 AM from Dwarika (23^{o} N, 69^{o} E), in the month of Kartik –

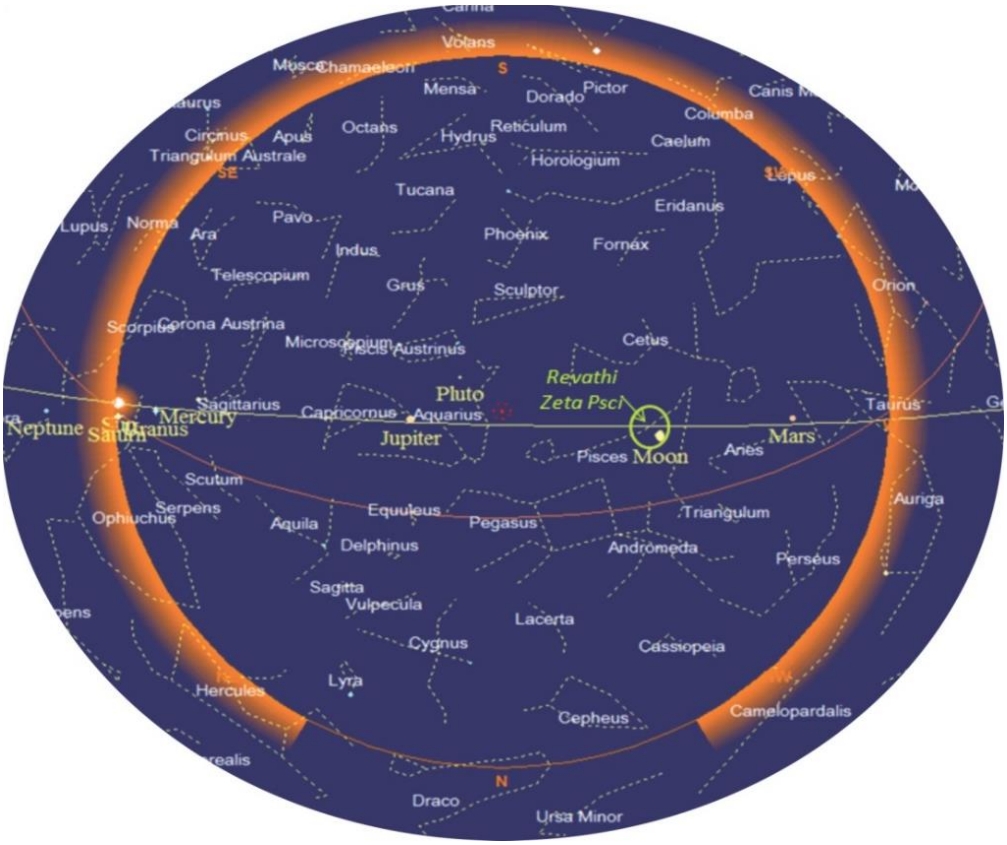


Figure 5: Sky-view on 25th September 3139 BCE at 6:20 AM from Dwarika (23°N, 69°E). It is month of Kartik and Moon is in Revati Nakshatra.

Stellarium displays this sky view 27 days later on 22.10.3139 BCE -

Corresponding view generated from *Stellarium 0.15.2* using VSOP87/ELP2000-82B ephemeris

After reaching Hastinapur, Lord Krishna tried to persuade Duryodhana to make peace with Pandavas but Duryodhana said, "I can sacrifice my life, my kingdom, my everything, but I can never live in peace with the Pandavas." Consequently, the peace mission failed and the war was just going to begin. Not wanting to take sides, Balram left for 42 days of pilgrimage in *Pushya Nakshtra (Moon in Cancer) i.e.* on 3rd Oct. 3139 BCE and was to come back after 42 days in *Shravan Nakshatra* (9/34/5-6). See the sky view of 3rd October, 3139 BC from Hastinapur (29° N, 77° E), when Moon was in Pushya Nakshatra -

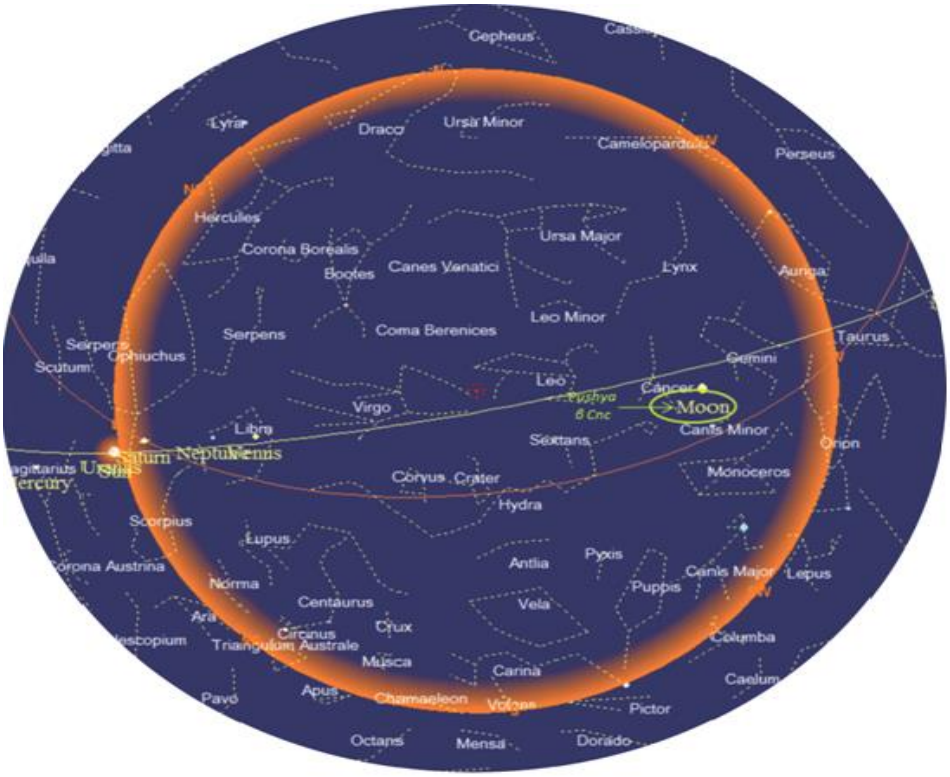
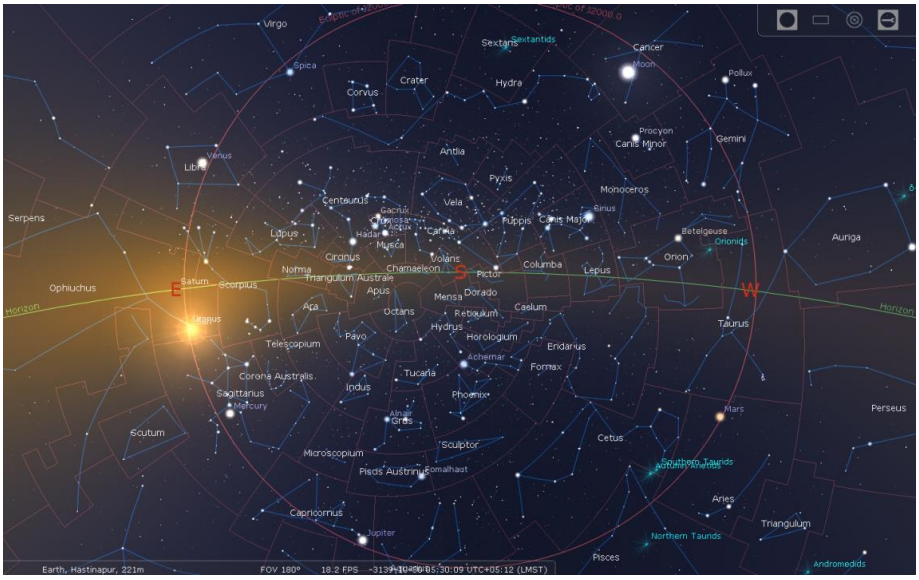


Figure 6: 3rd October, 3139 BCE, Hastinapur (29° N, 77° E), Moon in Pushya Nakshatra

Stellarium displays this sky view 27 days later on 30.10.3139 BCE -



Corresponding view generated from *Stellarium 0.15.2* using VSOP87/ELP2000-82B ephemeris

The forces of Duryodhana and of Yudhisthir stood opposite to each other in Kurukshetra; ready to fight the most devastating war in the history of mankind! As suggested by Lord Krishna the war actually started on Jyeshta Amavasaya day of Margshirsh month, when Moon was near Jyeshta in Scorpius (5/142/17-18), which happened to be on 13th October, 3139 B.C. See the sky-view of this historic day, when before the war Shri Krishna had imparted that historic Gita Updesh to the world through the instrumentality of Arjun! Eleven days letter after the fall of Bhishma Pitamah, this was narrated by Sanjay to Dhritarashtra and that Margshirsh *Shukla Ekadashi* is celebrated as Gita Jayanti till date.

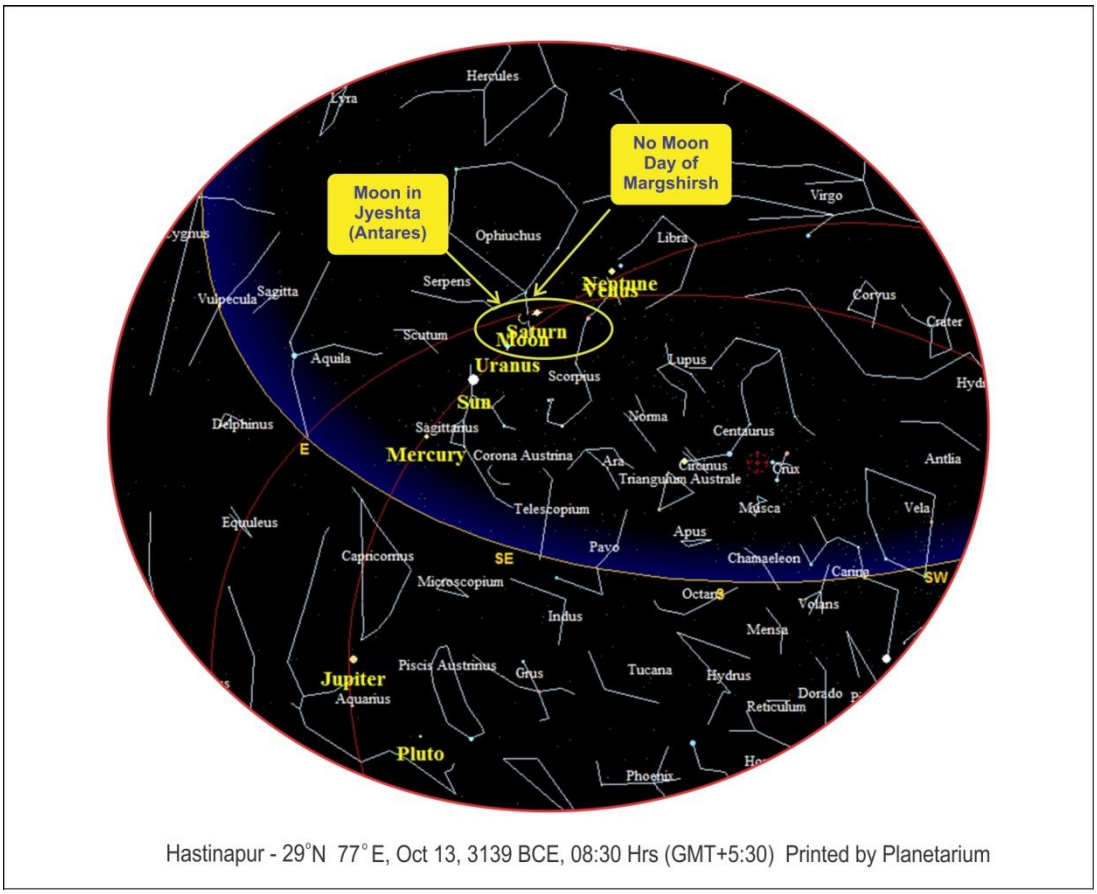
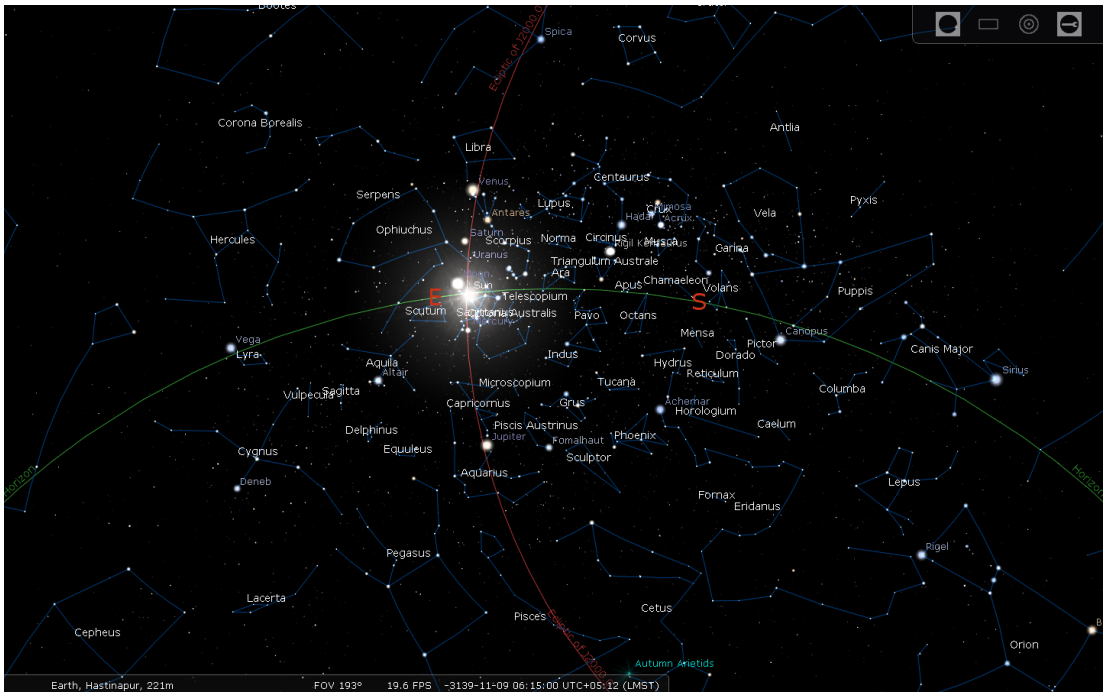


Figure 7: Sky-view on 13th October, 3139 B.C. – No Moon day of Margshirsh month when Moon was near Jyeshta in Scorpius. Mahabharat war started on this day after Gita Updesh by Lord Krishna.

Stellarium software displays this Amavasya of Margshirsh month when Moon was in Jyeshta (Scorpius) in the sky view of 9th November, 3139 BCE, i.e. 26 days later.



Corresponding view generated from *Stellarium 0.15.2* using VSOP87/ELP2000-82B ephemeris

Eleven divisions of Duryodhana's army and seven divisions of Yudhisthir's army stood face to face in the battle ground of Kurukshetra. Arjun requested Lord Krishna to take his chariot in the middle of Kuru and Pandu armies. After seeing his near and dear ones, like Bhishma Pitamah and Guru Drona, Arjun broke down and abandoned his *Gandiv Dhanush.* At this juncture, through Arjun, Lord Krishna passed on to the World the great philosophy of Bhagavad Gita. He asked Arjun to do his K*arma* by fighting the war in order to protect *Dharma*. He also added that the soul is eternal and indestructible, only the body is perishable.

The time of this Gita-updesh must have been sometime before the beginning of war on 13th October 3139 B.C. It was the month of Margshirsh in winter season, when the Sun was in Dakshiayan (Southward movement). We Indians still wait for the assurance given by Shri Krishna during Gita-updesh -

yadā yadā hi dharmasya glānirbhavati bhārata |
abhyutthānamadharmasya tadātmānaṃ sṛjāmyaham || (4.07)

paritrānāya sādhunām vināsāya ca duskritām |
dharma-samsthāpanārthāya sambhavāmi yuge yuge || (4.08)

Through these words Lord Krishna had assured that "whenever and wherever there is a decline of Dharma i.e. virtue and true religion languish whereas irreligion and sin predominate, O descendant of Bharat! I manifest myself in different eras to establish the superiority of Dharma by annihilating the miscreants and protecting the pious and the noble."

We still console ourselves at the death of a near and dear one by remembering what Lord Krishna had said –

nainaṃ chindanti śastrāṇi nainaṃ dahati pāvakaḥ |
na cainaṃ kledayantyāpo na śoṣayati mārutaḥ || (2.23)

Meaning thereby that the soul can never be cut into pieces by any weapons, nor can it be burnt by fire. The soul cannot be moistened/submerged by water, nor can it be withered by wind. The soul is eternal and indestructible; it is only the body which perishes. Shri Krishna had also said -

karmanya evadhikaras te ma phalesu kadacana |
ma karma-phala-hetur bhur mā te sango 'stv akarmani ||2-47||

Meaning thereby, "your concern is only with the actions, never with their fruits. Let not the fruits of actions be your motives. Perform your righteous duties without being attached to their results."

Our belief system still centres around karma yoga, jnana yoga and bhakti yoga, the three paths out of which individual could make a choice, with the predominance of karma yoga. The time of this Gita-updesh must have been sometime before the beginning of war on 13th October 3139 B.C. It was the month of Margshirsh, in winter season, when the Sun was in Dakshiayan (Southward movement). Sanjay had come to the battle field to watch/record the events, so that these could be narrated to Dhritarashtra later-on. He did so on the eleventh day after the fall of Bhishma Pitamah, when he reported back to Dhritarashtra. This day of Shukla Ekadashi of Margshirsh is still celebrated as Gita Jayanti Day all over India. (6/13/1-4, 6/24-42). After Lord Krishna convinced Arjun to take up once again his Gandiva and arrows, Yudhishthir's army men were filled with enthusiasm and delight.

Then suddenly, Yudhishthir put off his armour and cast aside his weapons; alighting from his chariot he proceeded with folded hands towards Pitamah and Guru Drona. The other Pandav brothers went behind him. Yudhishthir sought the blessings of Pitamah, Drona, Kripacharya and Shalya, so that he could win the war. They did give him their blessings although they added that "a man is the slave of wealth, but wealth is slave to none." Therefore they were to fight on the side of Kurus, led by Duryodhana, but their blessings were with Yudhishthir.

The war began later in the day on 13th October, 3139 B.C., with Bhishma Pitamah as the Commandar-in-chief of Duryodhana's army. Military science was much developed; a four division army, comprising of infantry, horse riders, elephant riders and chariot riders, was built in nine steps. The weapons used included astras (missiles like chakras and arrows), sastras (swords, spears and axes), dandayuddha (mace and musala) and yantrayuddha (firearms like sataghni and bhusundi). Some such weapons, which are dated as more than 5000 years old, have been found during excavations in the adjacent geographic locations, like

Bhirrana and Rakhigarhi. Every day there used to be different kind of battle-array. At least eighteen types of vyuha-rachnas are described in the Epic.

Under the command of Bhishma Pitamah, Kuru army fought fierce battles and killed very large number of warriors of Pandava's side during first nine days. The Pandavas visited Bhishma Pitamah by night on ninth day and sought his blessings. He advised them to place Shikhandi in the front line as Bhishma would not attack a woman. On the 10th day, placing Shikhandi in front of him, all the pandav brothers launched fierce attack from all sides against Pitamah. Arjun succeeded in showering thousands of arrows on Bhishma Pitamah, which practically put him on the bed of arrows. Bhishma Pitamah was now waiting for the beginning of Uttrayan for his *mahaprayan*.

On 11th day of war, after Pitamah's fall, Sanjay reported the events of first ten days of war to Dhritarashtra. Guru Drona took over as the commander-in-chief of Duryodhana's forces on the 11th day after war. Through his clever *chakravyuh formation* (circular array), he succeeded in killing Abhimanyu when Jaidrath engaged Arjun in a diversionary battle far away. However, on the 15th day Dhrishtadyumna succeeded in killing Dronacharya by severing his head. On 16th day Karna took over as the commander-in-chief of Duryodhana's forces but on the 17th day of war, the wheel of Karna's chariot got stuck in the mud. Just at that time Arjun shot an arrow which instantly killed Karna in the battlefield.

On the 18th day Shalya came to fight as the commander-in-chief of Duryodhan's Kuru forces but got killed at the hands of Yudhisthir by mid day. Thus on the 18th day the war came to an end but Duryodhana hid himself in the waters of Dvaipayan Lake; he was making plans to take revenge from Pandavas after his recovery. The Pandavas launched the search operation; after several attempts, they finally succeeded in locating him on the 14th day. On being challenged by Pandavas, Duryodhana came out of the lake to fight mace battle with Bhim. Just at that time Balram came there in Shrawan Nakshatra after 42 days of pilgrimage and he desired to see the mace battle between his two disciples (Shalya Parva 9/34/5-7). See the sky-view from Kurukshetra (30º N 77º E) of 14th November, 3139 B.C, when Moon was near Shrawan in Capricornus.

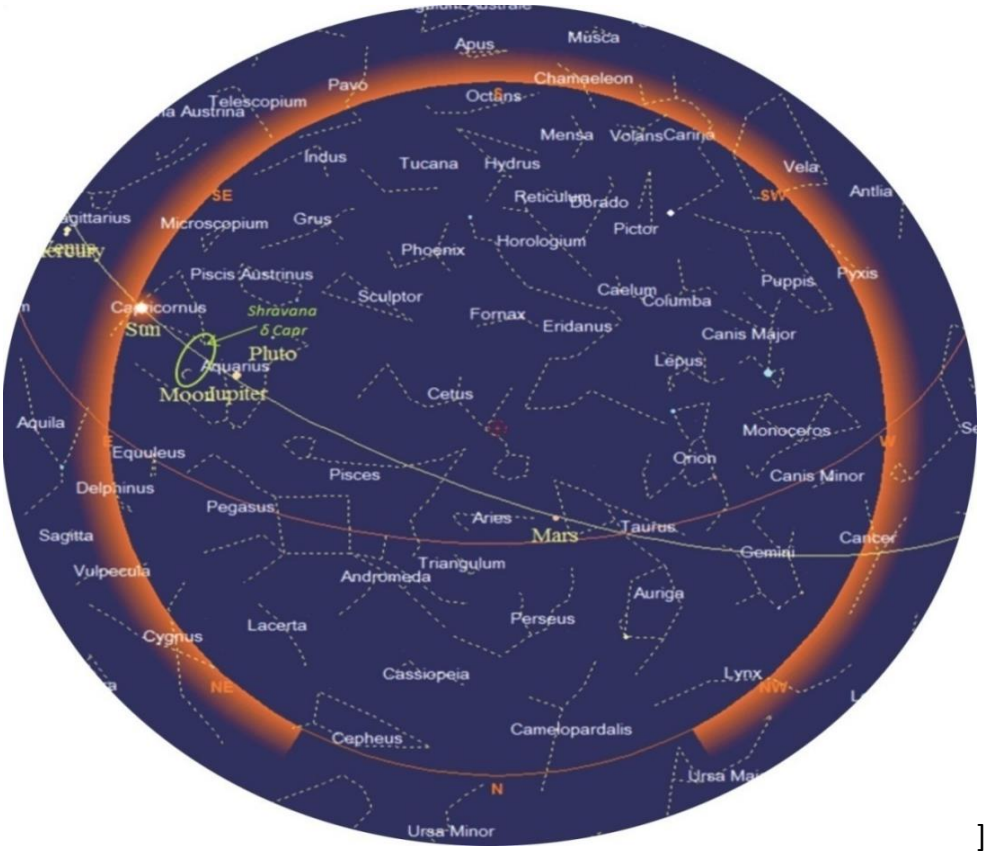


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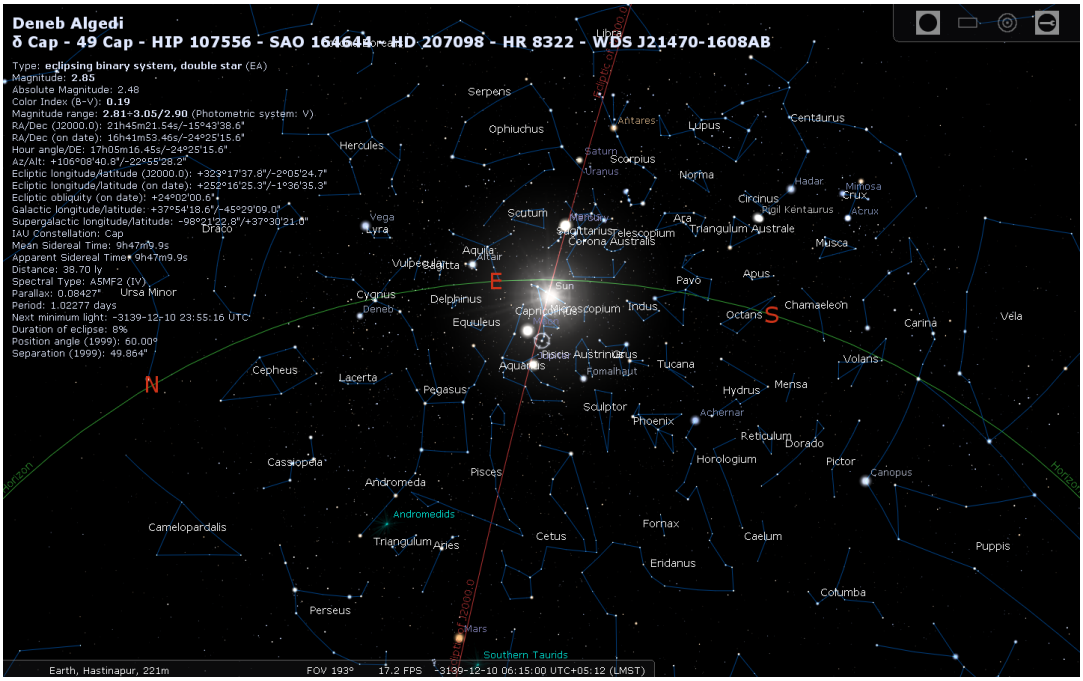
Figure 8: sky-view from Kurukshetra (30° N 77° E) of 14th November, 3139 B.C, when Moon was near Shrawan in Capricornus printed by Planetarium

Stellarium displays this sky view on 10th December, 3139 BCE at 15:00 hrs -



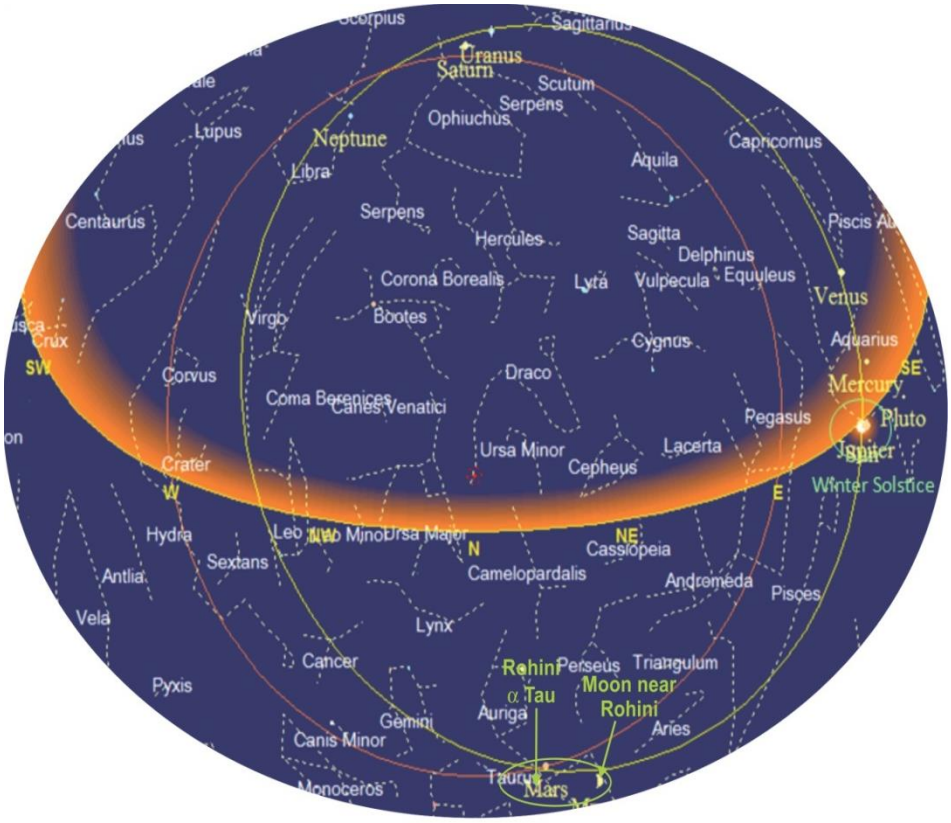
Corresponding view generated from *Stellarium 0.15.2* using VSOP87/ELP2000-82B ephemeris

On being hit by Bhim on his thighs, Duryodhan collapsed and Pandavas went away leaving him behind in pain. Kritverma, Kripacharya and Ashvatthama were grief-stricken looking at the plight of Duryodhan. They decided to take revenge from Pandavas. In the middle of the night when the entire surviving family members, commanders of Pandavas, and all the five sons of Draupadi were in deep slumber, they killed five sons of Draupadi by striking them with their shastras. Then they killed their commander-in chief Dhrishtadhyuman and all other remaining warriors were killed in their sleep by putting the camp on fire. Ashvatthama even tried to destroy the womb of Uttara but Lord Krishna saved her pregnancy. This child in Uttara's womb, named Parikshit, later on became the king of Hastinapur, when Pandavas went for *Swargarohan.*

Yudhishthir reported the death toll at six million during this dreadful war. The women were crying piteously after losing their husbands, fathers, brothers and sons (M.B/11 – Stri parva) According to one study conducted by Estonian Bio-Centre, Tartu, around 5000 years back the ratio of men vis-à-vis the women went down to 1:4.

After the end of Mahabharat War, Yudhishthira was coronated as the king of Hastinapur. Grief-stricken, he was very reluctant to accept the kingship. He performed the funeral rites of the deceased kings and warriors and took several steps to console the grieving females.

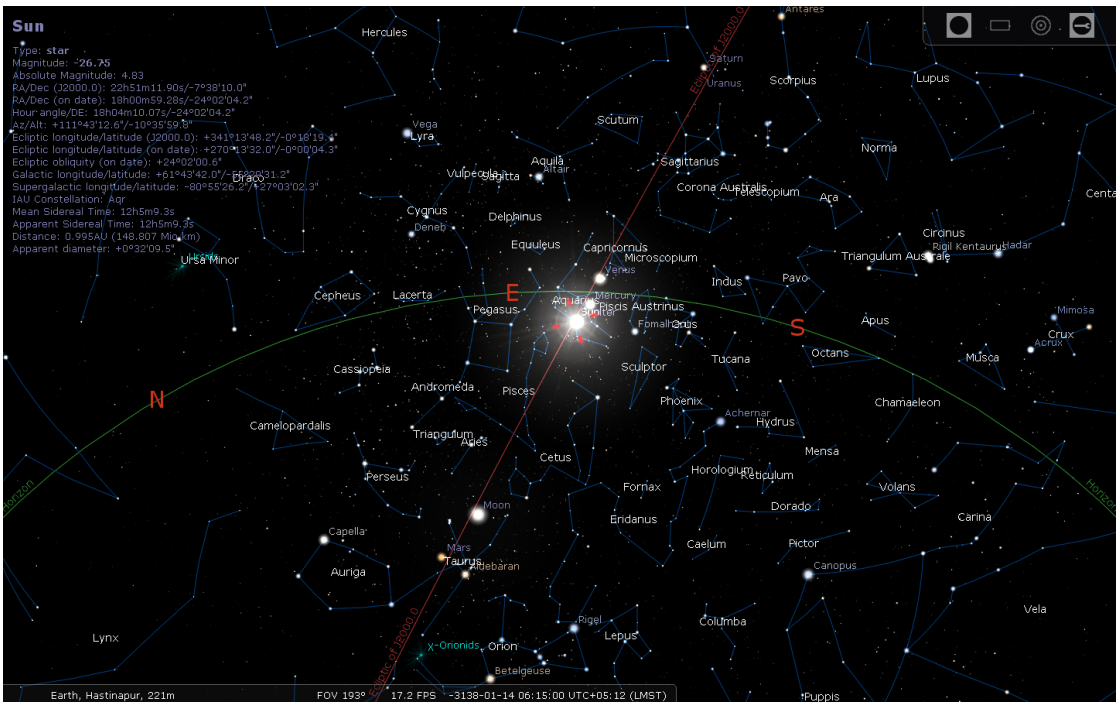
Lying on his bed of arrows, Bhishma Pitamah was waiting for the Sun to begin its Northward journey (Uttarayan). That day arrived on 19th December 3139 B.C. when it was Saptmi of the lighted fortnight in the month of Maagh and Moon was in Rohini Nakshtra (in Taurus), as per the references in Anushasana Parva(13/167/26-28) and in Shanti parva (12/47/3) of Mahabharat. See the Sky view from Hastinapur (29^{o} N, 77^{o} E) of 19th December, 3139 BC at 7.20 AM, when Sun had just started its northwards journey; Moon was near Rohini and it was Magh Shukla Saptami. This is also a unique date and sky-view which does not get repeated in / around 5561 BCE, 3067 BCE, 1792 BCE or 1478 BCE.



19 December, 3139 BC, 7:20 hrs., Hastinapur, 29°N, 77°E; Winter Solstic

Figure 3: Sky view from Hastinapur (29°N, 77°E) of 19th December, 3139 BC at 7.20 AM, when Sun had just started its northwards journey; Moon was near Rohini and it was Magh Shukla Saptami- Planetarium

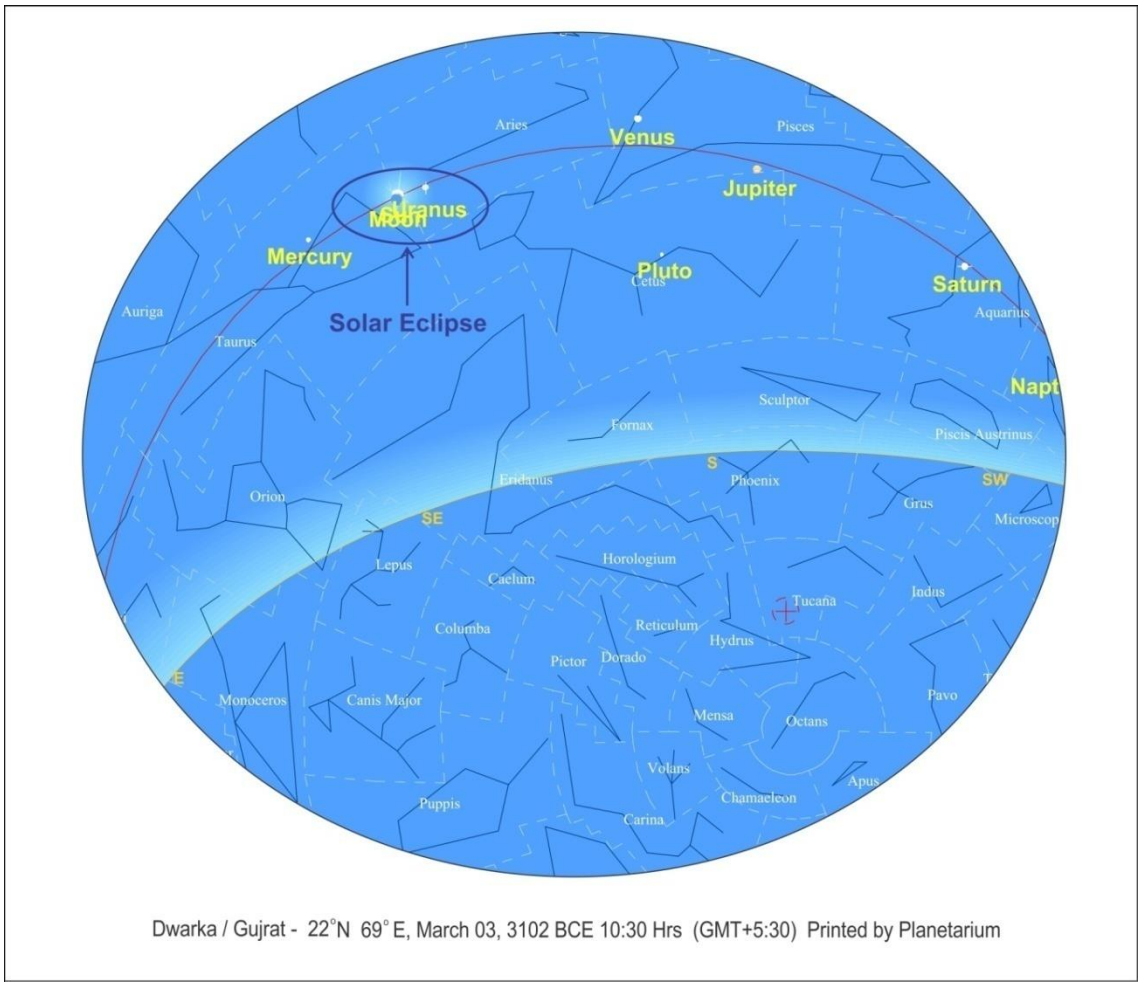
Stellarium displays this very skyview 26 days later on 14th January, 3138 BCE -



Corresponding view generated from *Stellarium 0.15.2* using VSOP87/ELP2000-82B ephemeris

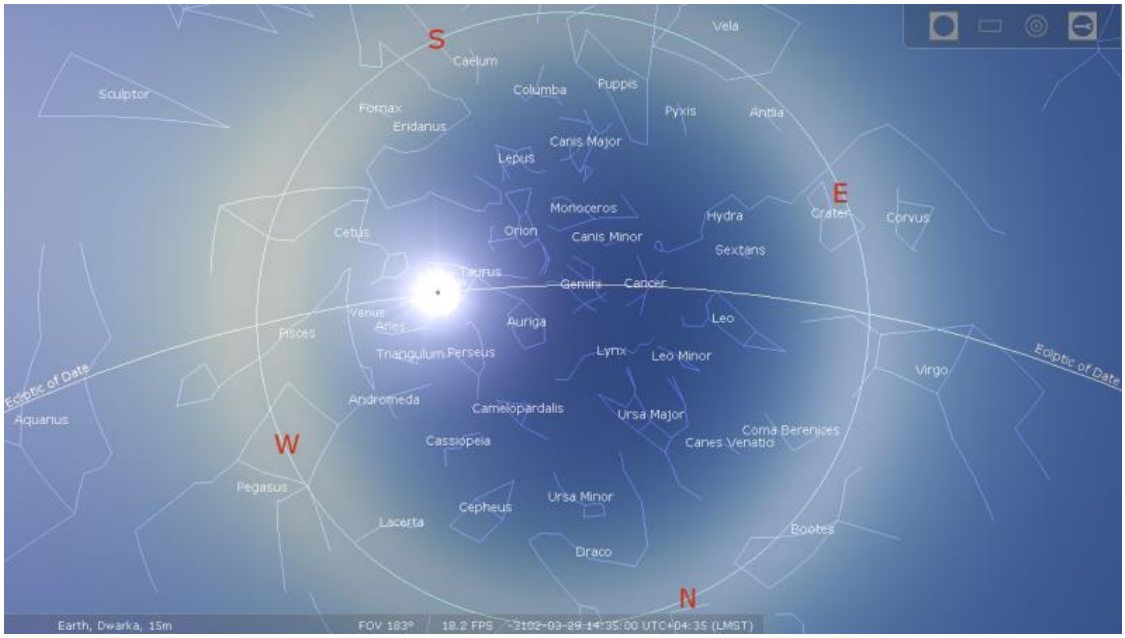
King Yudhishthira arrived on Magh Shukla Saptami and bowed before Bhishma Pitamah who enlightened him about the basic principles of Rajdharma, Mokshdharma, Daandharma and Shantidharma. Thereafter every surviving member of the family met Pitamah. The very next day i.e. on 20th December 3139 B.C., Bhishma left for his heavenly abode and this day is celebrated as Bhishma Asthmi till date.

Thereafter, Yudhishthir got fully involved in the welfare of the masses. After some time he conducted Ashvamedha Yajna and gave huge amount of wealth in charity. Lord Krishna also went back to his kingdom Dwarika, along with Yadavas, Gopis and war-widows. 36 years were spent in peace but thereafter the signs of destruction all around again became visible. Around that time, a solar eclipse was seen from Dwarika which also occurred on an Amavasya on 13th lunar tithi after Purnima as per references in the Mausala Parva. See the solar eclipse of 3rd March 3102 B.C. (at 10:30 AM) from Dwarika (23° N, 69° E) -



	RA	Declination
Sun	22h 57.1m	-6˚42’ / 6.7˚
Moon	22h 58.4m	-7˚03’ / 7.05˚

Stellarium depicted this solar eclipse 26 days later on March 29, 3102 BC 14:35 hrs -

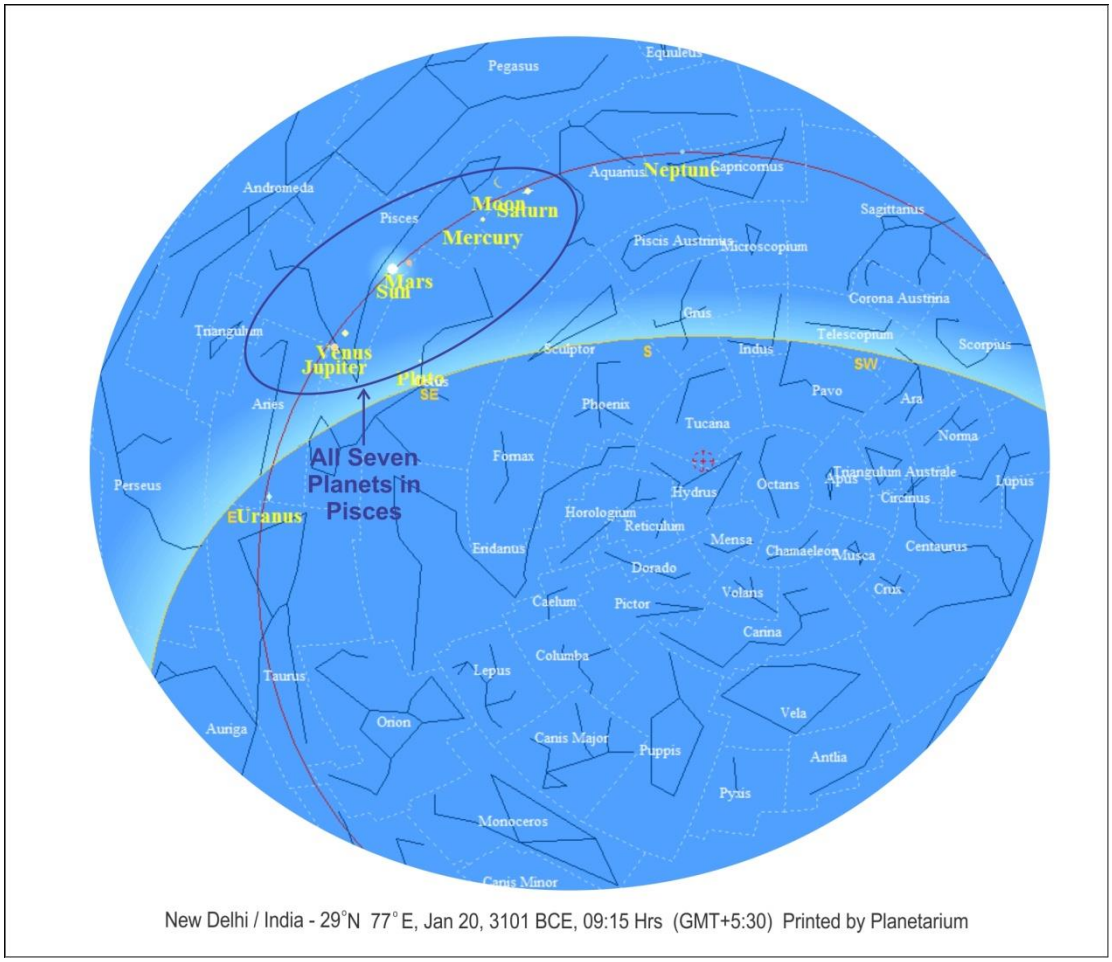


Corresponding view generated from *Stellarium 0.15.2* using VSOP87/ELP2000-82B ephemeris

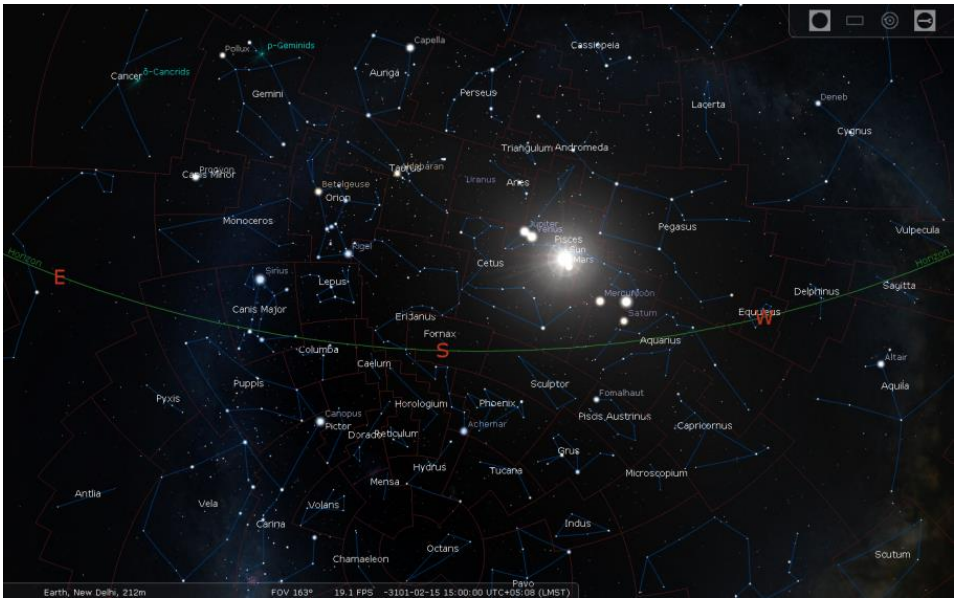
Thereafter, there was destruction all around in Dwarika. Yaduvanshis were killing other Yaduvanshis. Balraam had died during his yog mudra in the forest, Vasudeva also left for his heavenly abode. Yadav race was at the verge of extinction. After some time the entire city of Dwarika was devoured by the Sea. On receipt of a message from Lord Krishna, Arjun had left for Dwarika. Lord Krishna was sitting in yog mudra, thinking that the time for his departure had arrived. Suddenly, an arrow mistakenly shot by a hunter pierced at the heel of Lord Krishna, who thereafter left for celestial region.

Arjun performed the last rites of many kinsmen and took the survivors along with him. He made Vajra the king of Indraprastha and settled other survivors in smaller kingdoms. After hearing about the destruction in Dwarika and about Mahapriyan of Lord Krishna, Yudhisthir decided to renounce the world. He coronated Prikshit, son of Uttara and Abhimanyu, as the king of Hastinapur. After donating huge amount of wealth in charity, he left for Swargarohan, accompanied by his four brothers and Draupadi.

Around this time a spectacular assemblage of Moon and five bright planets along with the Sun was seen on the eastern horizon in Pisces on 20th January, 3101 B.C. This striking sight in the morning hours must have come down as a legend associated with the beginning of Kali Era i.e. Kaliyug –



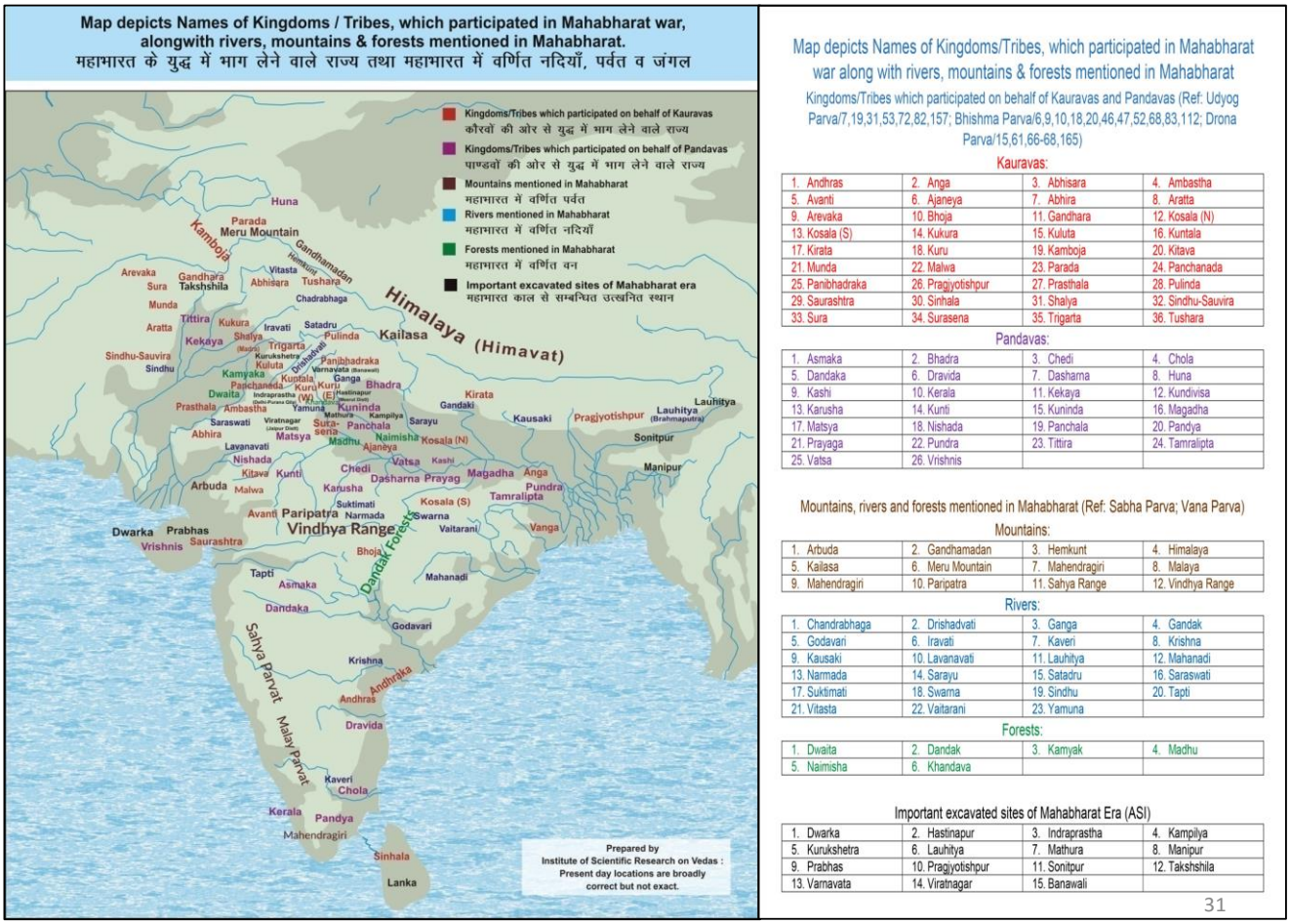
Stellarium depicts this very sky view of assemblage of all seven planets in Pisces in the eastrern horizon on 15th February, 3101-



Corresponding view generated from *Stellarium 0.15.2* using VSOP87/ELP2000-82B ephemeris

Geographical Evidences of Mahabharat war:

Let us just have one look at the map which displays the geographic locations of kingdoms and tribes which had participated in Mahabharat War. Most of the North Western kingdoms of Indian sub-continent fought on behalf of Kauravas; whereas those from South Eastern areas participated in the war to support the Pandavas. The kingdoms from Afghanistan to Kerala, from Dwarika to Arunachal Pradesh, from Sindhu Sauvira to Bengal, all had participated in the war. The reason was that they were all related to each other through marriages, relations and alliances. This reveals that Indian Nation had a much larger territory 5000 years back, thus discarding the mistaken concept which place origins of Indian Nation in anti British agitations, which started in 19th century. Have one look at the Map –



Map depicting kingdoms which participated in Mahabharat War, along with names of some excavated sites. It also displays the rivers referred to in Mahabharat.

The Map clarifies that Bharatvarsha was a nation with defined boundaries 5000 years back, when its territories included modern day India, Pakistan, Afghanistan, Turkamenistan, Tibet, Bangla-Desh etc.

Archaeological Evidences which support the astronomical dates of Mahabharat, placing it in 3139 BCE. -

Excavations have been carried out in many of the principalities and kingdoms plotted in the above Map, including the ones which had participated in the Great War. From the archaeological evidence from these sites, it has been concluded on the basis of C-14 dating that these political principalities and kingdoms were well established by the second millennium BCE, though the settlements started at many of these sites much earlier; for example –

- Sarai Khola and Pushkalavati (Charsadda) in **Gandhara**,
- BMAC and Gandhara Grave Culture sites in **Kamboja**;
- Bairat, Gilund and Ojiana in **Matsya**
- Mathura, Sonkh and Noh in **Surasena**
- Hastinapura, Hulas and Alamgirpur in **Kuru**
- Ahichchhatra, Atranjikhera, Kannoj and Kampilya in **Panchala**
- Ujjain, Kayatha, Nagda, Ahar in **Avanti**
- Eran and Tripuri in **Chedi**
- Kaushambi and Jhusi in **Vatsa**
- Rajghat-Sarai Mohana in **Kasi**
- Ayodhya, Sravasti, Lahuradewa, Siswania in **Kosala**
- Rajdhani, Narhan, Sohgaura in **Malla**
- Rajgir, Chirand and Juafardih (Nalanda) in **Magadha**
- Vaisali and LauriyaNandangarh in **Vrijj**
- Champa and Oriup in **Anga**
- Adam and Inamgaon in **Asmaka**

Kingdom of Kurus i.e. Hastinapur was near Upper Ganga plains, Krishna's Mathura was on the banks of Yamuna and war was fought in Kurukshetra of Sarasvati region. Shakuni of Gandhara, jaydratha of Sindhu Sauvira and Shalya of Matsya Desh had come to participate in the war from Indus region. The excavations carried out in these areas have also established the direct connection of Mahabharat references with 3000 BCE. These include excavations at Mehrgarh, Kile Gul Mohammad and Rehman ki Dheri in Indus region, Rakhigarhi, Bhirrana, Banawali and Kunal in the Sarasvati valley, and Lahuradeva, Hetapatti and Jhussi etc. in Ganga region. from where terracotta, beads, jewellery, metals, weapons etc. have been excavated, the radio-metric dates of which go back to the time bracket ranging between 5000 - 2500 BC.

One may have one look at the Map prepared by Dr B R Mani, marking some important excavated sites along Indus-Sarasvati-Ganga regions. At almost all these sites, artefacts dated as belonging to 5000 BP have been excavated and most of these resemble the descriptions of articles referred to in Mahabharat -

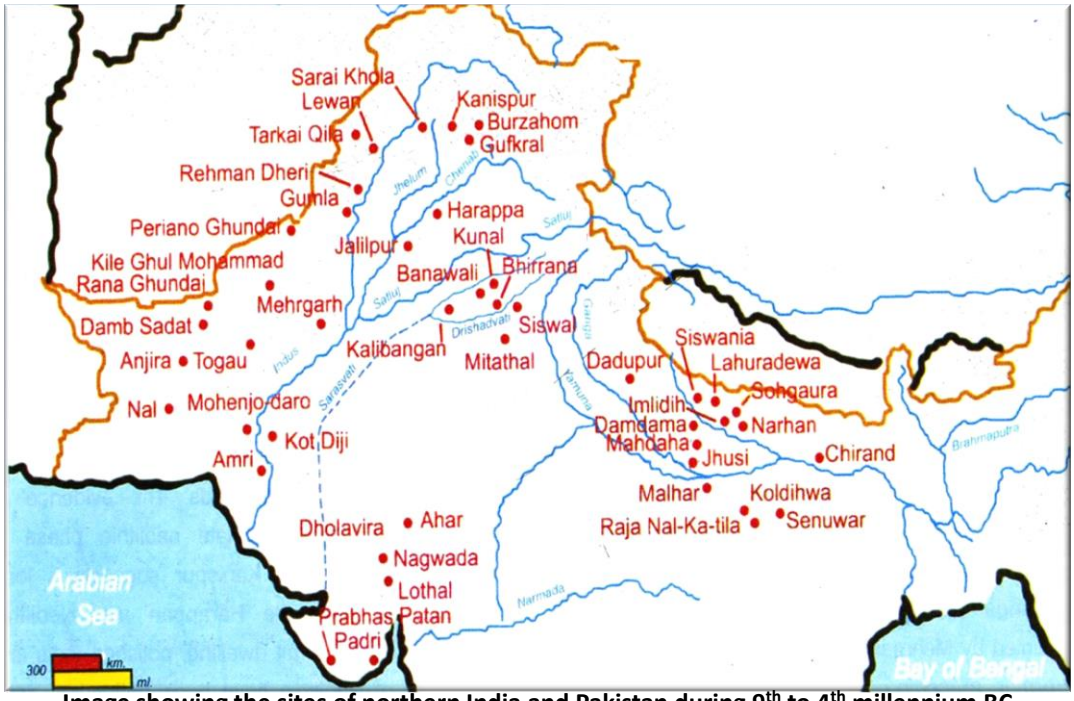
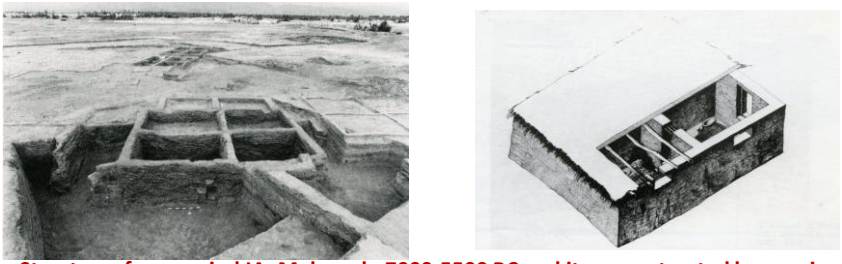


Image showing the sites of northern India and Pakistan during 9th to 4th millennium BC
नवीं से चौथी सहस्राब्दी ई.पू. के दौरान उत्तर भारत एवं पाकिस्तान में विद्यमान स्थलों का मानचित्र

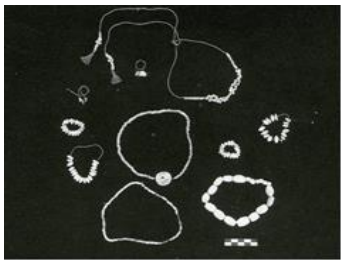
It is said that a picture is worth one thousand words. Therefore I am only reproducing some pictures of artifacts excavated from sites of Indus, Sarasvati and Ganga Regions. Readers may draw their own conclusions after recalling to their memory various references of Mahabharat –

Pictures of some excavated artifacts of Indus Region along with their radio carbon dates:



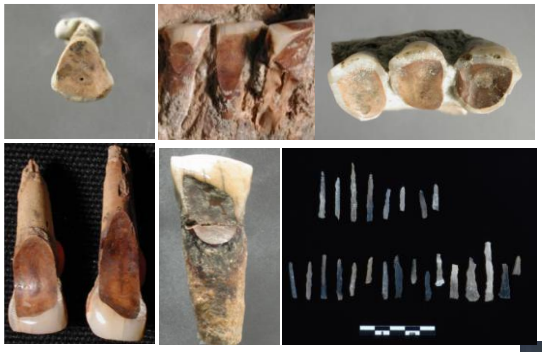
Structures from period IA, Mehrgarh, 7000-5500 BC and its reconstructed house view
मेहरगढ़, घर का ढांचा, (7000-5500 ई. पू.) एवं पुनर्निर्मित मकान का दृश्य

Superimposed compartmented buildings used for storage and house structures from IIA, Mehrgarh, 5500-4800 BC
परतदार कक्ष सहित निर्माण भण्डारण एवं आवास प्रयोग हेतु। मेहरगढ़, IA, काल का ढांचा, 5500-4800 ई. पू.



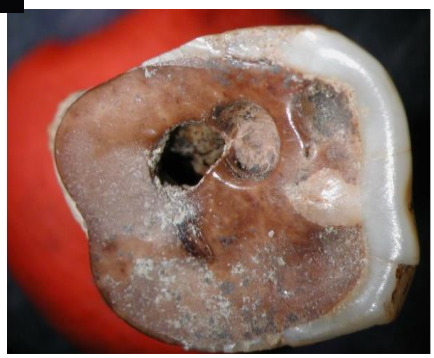
Ornaments made of turquoise, steatite and semi precious materials; Mehrgarh, 7000-5500 BC
फ़िरोज़ा, सिलखड़ी तथा अर्द्ध कीमती पत्थर से बने आभूषण; मेहरगढ़ 7000-5500 ई.पू.

Headband and waist ornaments from Mehrgarh, 7000-5500 BC
केश बंध एवं कमर बंध मेहरगढ़ 7000-5500 ई. पू.



मेहरगढ़ से प्राप्त दंत चिकित्सा के प्राचीनतम साक्ष्य:
9 व्यक्तियों की दन्त चिकित्सा के दौरान दांतो को बरमाने तथा भरने के 7000 ईसा पूर्व के उत्खनित प्रमाण, ड्रिल बिट्स के चित्रों सहित ।

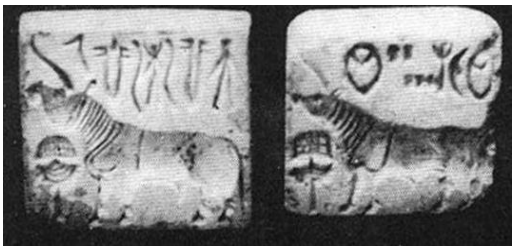
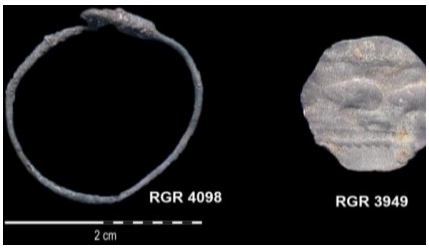
Earliest evidence of dentistry at Mehrgarh:
A total of 9 individuals had one or more cases of teeth drilled in vivo, most probably after therapeutic operations, 7000 BC; a group of chert drill heads found on the floor of a Neolithic house at Mehrgarh



Some pictures of artifacts excavated from sites of Sarasvati Region, in and around Haryana and Kurukshetra, having direct relation with Mahabharat references. All these are located around Kurukshetra and Hastinapur, falling under the territory of Kuru kingdom 5100 years back. (©www.asi.nic.in) -



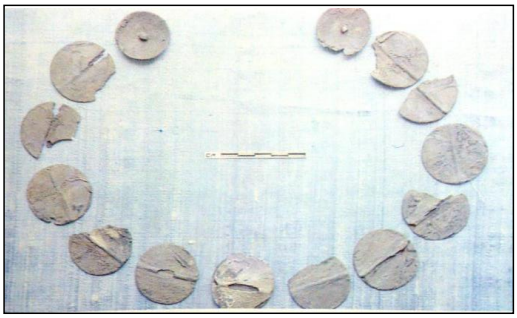
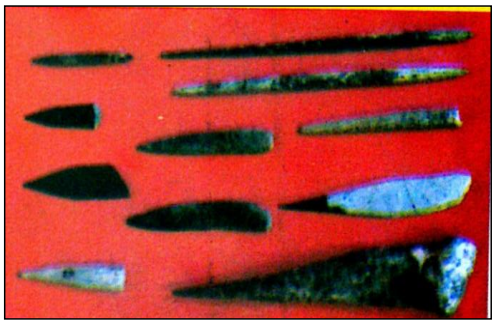
Early *Harappan* pottery, copper mirror, beads' necklaces, seals and silver ornaments excavated from Rakhigarhi, 5000 - 2500 BC

Copper Bangles, beads, Lapis Lazuli and Shell necklaces, copper arrowheads, Chert blades and Core from Bhirrana, 7000 - 2500 BC



Terracotta pottery painted with two colours, Silver spiralled bangles , Painted terracotta pitcher, Silver necklace and Copper arrowheads from Kunal, Haryana, 5000 - 2500 BC

Some pictures of artifacts excavated from sites of Ganga Region (courtesy – Archaeological Survey of Uttar Pradesh and ASI) -

In Lahuradeva, Distt. Santkabir Nagar UP, excavations have yielded 7000 years' old evidence of cultivated rice, barley, wheat, lentils, grams, peas, millets, grapes etc. as well as of copper arrowhead and copper bowside (Tewari et al. 2001-2002, 2007-2008, Puratattva),

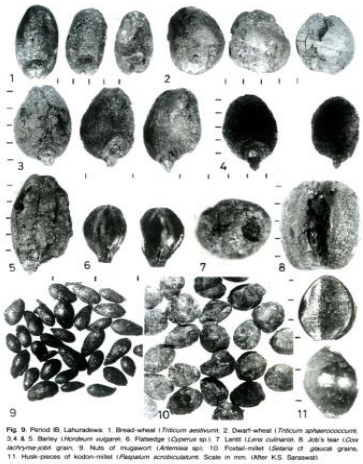
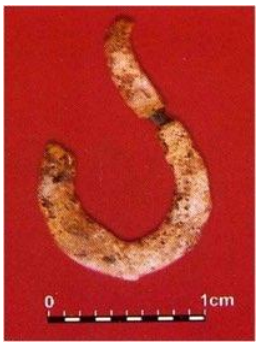


Fig. 9. Period IB, Lahuradewa: 1. Bread-wheat (*Triticum aestivum*), 2. Dwarf-wheat (*Triticum sphaerococcum*), 3,4 & 5. Barley (*Hordeum vulgare*), 6. Flatsedge (*Cyperus* sp.), 7. Lentil (*Lens culinaris*), 8. Job's tear (*Coix lachryma-jobi*) grain, 9. Nuts of mugwort (*Artemisia* sp.), 10. Foxtail-millet (*Setaria* cf. *glauca*) grains, 11. Husk-pieces of kodon-millet (*Paspalum scrobiculatum*). Scale in mm. (After K.S. Saraswat).



Excavations at Jhusi and Hetapatti in Prayag, Allahabad have yielded artifacts and

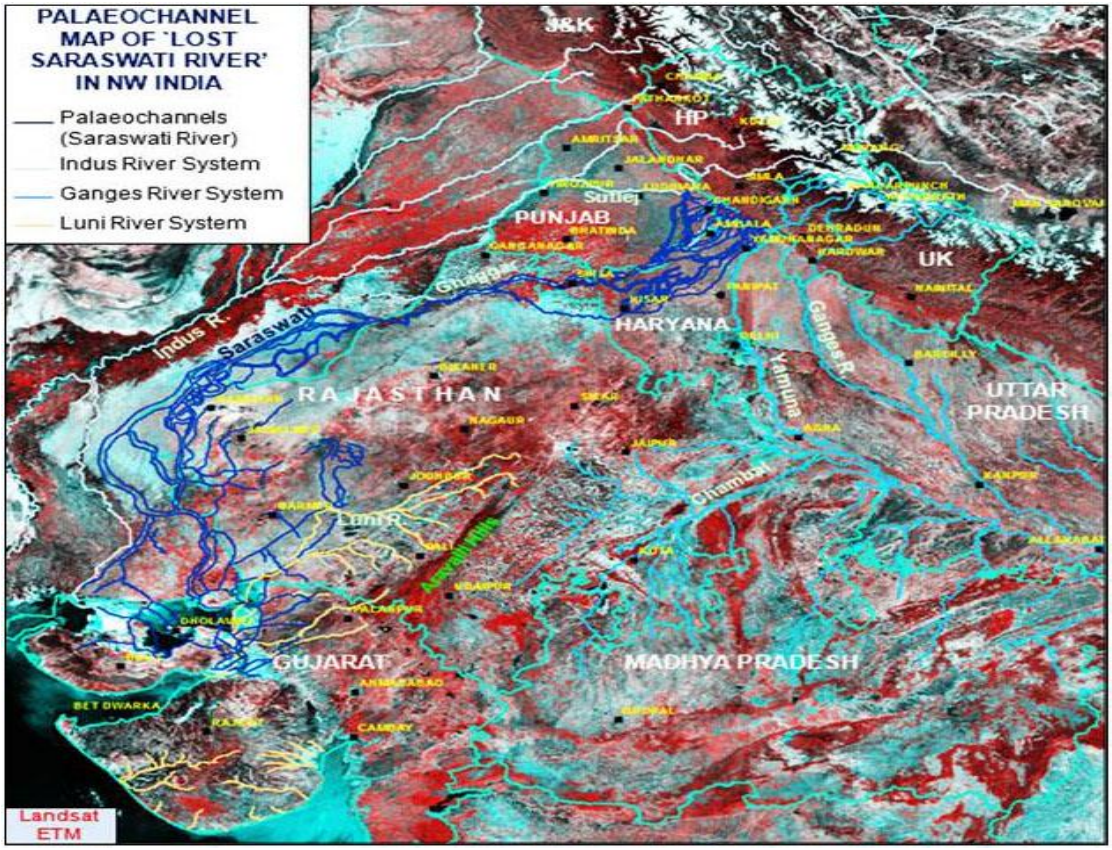
plant remains dated more 7000 years old. Reference Shri J. N. Pal's article, "*The Early Farming Culture of the Middle Ganga Plain----Excavations at Jhusi and Hetapatti*" in Pragdhara No. 18; carbon dates are 7th millennium - 4th millennium BCE.



Just one look at the pictures of the artifacts given above would make it clear that there is urgent need to rewrite the ancient history of Indian Sub continent by correlating scientific evidences from ten different disciplines. Similar civilization and culture have been evolving for more than 8000 years in Indus, Sarasvati and Ganga regions. Harappans were basically Vedic people; appropriately referred to as Vedic Harappans by Shri Bhagwan Singh Ji in his phenomenal book titled "Vedic Harappans" and also by many other scientists and scholars. Based on genetic studies carried out all over the world, Harappans were described by Dr Kalam being of indigenous origin who continued to stay in India for thousands of years during the current Holocene.

Supporting Evidences from Remote sensing imagery:

References to fluctuating water volumes of rivers like Saraswati, Indus, Ganga, were extracted sequentially. The reports from Remote Sensing, Geology and Hydrology of such fluctuations corroborated our astronomically determined dates of Vedas & Epics. Antiquity and continuity of our civilization during last 9-10 thousand years is also supported by remote-sensing imagery of palaeo-channels of North Indian rivers. As per Mahabharat references, Sarasvati river was in the process of decay but it had not fully dried up. Infact, it had disappeared near Vinasan in Rajasthan area. By this time Yamuna had got diverted towards Ganga and Sutlej had joined Indus through Beas after getting disconnected from Sarasvati due to tectonic activity and many other reasons. However Drishadvati was still flowing. For reference, only one picture presented by Dr J R Sharma from ISRO, Jodhpur Centre is reproduced below -



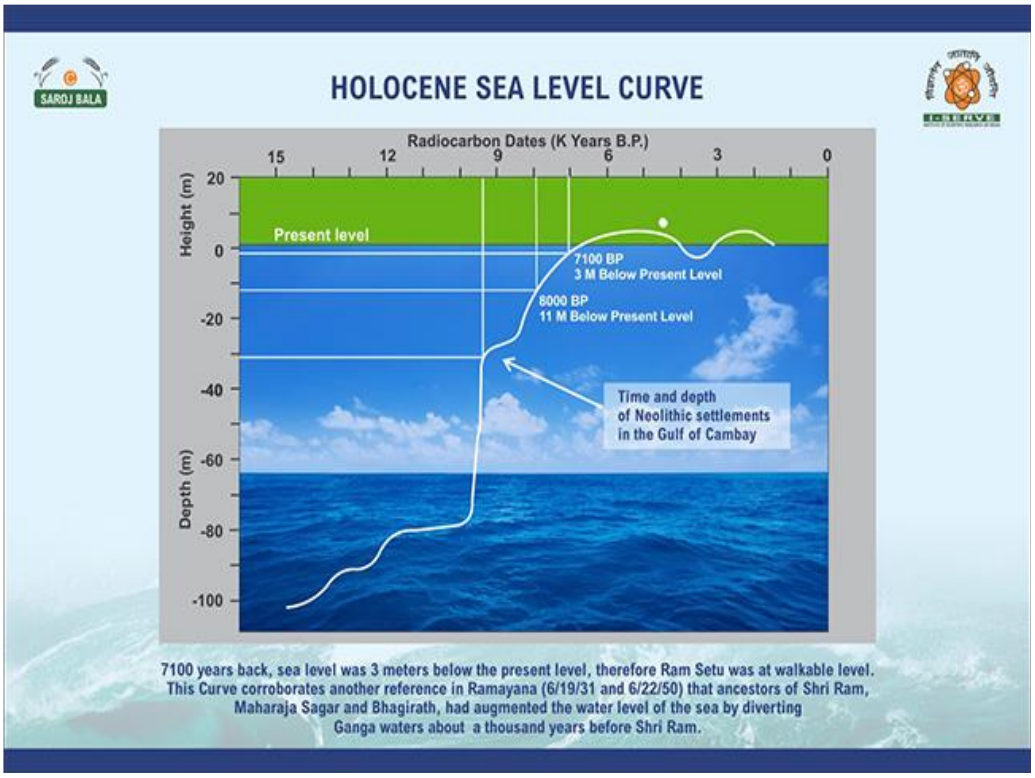
Rajasthan Underground Water Commission had dug four wells in Jaisalmer region of Rajasthan and hydrological testing revealed that these were Himalayan waters, which were flowing through ancient route of Sarasvati. Many sites along the Sarasvati route displayed in above Map have revealed that there were civilized settlements around 5000 BP, thus establishing their connection with the Kuru and other kingdoms of Mahabharat era.

Supporting Oceanographic Evidences- submerged and re-emerged settlements and structures:

Oceanographic Evidences have revealed indigenous growth of civilization in Indian subcontinent for more than 9000 years. We have all learnt about submerged settlement of Khambat dated more than 9000 years old. References to submerged or re-emerged islands like Lothal, Dholavira, Dwarka & Prabhas have also corroborated the astronomical dates of Mahabharat. The Holocene Sea Level Curve prepared by the National Institute of Oceanography reveals that water level of the sea was lowest around 1500 BCE, thereafter it started rising. Some people have believed that settlement explored by Dr S R Rao and his team was Shri Krishna's Dwarka and it submerged due to rise in sea level thereafter.

However, it is important to take note that Mahabharat contains no references which could indicate wet climate resulting in rise in sea level. In fact there are references to dry spell, forests being engulfed by fires. Therefore it is possible that the existing Dwarka, Bet Dwarka are the re-emerged settlements. However a scientist has to carry out indepth research on the

subject. The entire reference to the devouring of Dwarka structures by the sea in Mahabharat points to a sudden cyclone, tornado, or Tsunami, as a result of which Dwarka got submerged.



In view of the above said scientific evidences, we can safely conclude that Mahabharat refers to the historical events of the remote past. The Mahabharat war was actually fought about 5156 years back in 3139 BC. Just before that war, Shri Krishna had actually passed on to the world, through the instrumentality of Arjun, that profound philosophy of Bhagavadgita.

Keeping in mind the discriminations and distortions prevailing in India during modern times, let us remember and follow what Lord Krishna said in 4/13 of Bhagavadgita –

cāturvarṇyaṃ mayā sṛṣṭaṃ guṇakarmavibhāgaśaḥ |
tasya kartāramapi māṃ viddhyakartāramavyayam || (4.13)

Lord Krishna said that four *varnas* had been created by God Almighty, based on the *guna* i.e. qualities and *karma* i.e. actions/functions of individuals. Thus the four *varnas* had nothing to do with the birth or with the modern day caste system. Dronacharya was a Brahmin but fought like a kshtriya; Karna was discriminated against by Bhishma but befriended by Kuru king Duryodhana. Eklavya was discriminated against by Drona but was mentored by Jarasandha. Sudama was a Brahmin but was very poor, whereas Drona was a Brahmin but humiliated by King Drupada. Thus discrimination was not caste-based but more complex, which reflected the selfish motives and baser or nobler instincts of individuals.

However over the years these four *varnas* got linked to birth and gave rise to caste-system. Slowly social evils like untouchability, inequality, caste-based discrimination started taking

deep roots, which have played havoc with our country and its social fabric. To remove these vices, we shall have to revert back to the true teachings contained in our ancient Vedas and Epics. We shall have to cleanse these from the distortions, which were interpolated subsequently after India was enslaved by external forces. Let us all resolve to build India in which no one is discriminated against and all are treated with love and respect.

In the words of Dr. A P J Abdul Kalam, "In India the core culture goes beyond time. It precedes the arrival of Islam; it precedes the arrival of Christianity……..It is when we accept India in all its splendid glory that, with a shared past as a base, we can look forward to a shared future of peace and prosperity, of creation and abundance. Our past is there with us forever. It has to be nurtured in good faith, not destroyed in exercises of political one-upmanship."

Saroj Bala, IRS (Retd. Member, CBDT)
Director, Institute of Scientific Research on Vedas

Note on References

No references have been given within the text of this paper because no extracts or pictures have been taken from any other book. This paper contains the sky-views of astronomical references in Mahabharat, which have been generated by us making use of Planetarium ans Stellarium softwares. The pictures of excavated artefacts have been taken from the reports published by Archaeological Survey of India, Indian Archaeology Society, and Archaeology Survey of Uttar Pradesh and of Haryana. However, the names of authors of books, presentations, and articles who have influenced the contents of this paper are listed below with gratitude.

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B K Bhadra	K S Valdiya	S P Gupta
B Narhari Achar	K V R S Murty	S R Rao
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