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Legend in the Ancient Sanskrit Text of Vālmīki Rāmāyaṇa Unravels Comet Impact Event in the History of Earth's Evolution

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Abstract

Since its formation over 4.5 billion years ago, earth has been hit many times by comets. When a comet hits the earth, its impact is enormous similar to thermo nuclear explosion. Very few comet strikes are actually known to modern science. It is now widely accepted that comet impacts of the historical past have played a significant role in shaping the evolution of earth. In this article, we have attempted to decode an esoteric legend, namely "The Birth of Kārtikey" narrated by Sage Viśvāmītra in Vālmīki Rāmāyaṇa which unravels a specific event of the impact (collision) of a giant comet (symbolized by male divinity Kārtikey कर्तिकेय) on earth together with its root cause and its ramifications on earth's evolution. The root cause of giant comet impact event, mentioned in the ancient text of the legend, was abnormally intense cosmic interaction between Kuiper belt (an astronomical entity symbolized by female divinity Ākāśagaṅgā आकाशगङ्गा) and energy bursts from Sun (symbolized by male divinity Agni अग्निः). This super cosmic interaction was rare as it induced a giant comet within the band of Kuiper belt to cross its orbit and hit the surface of the earth with a massive force.

Without using any allegory or metaphor, the text of the legend precisely states that giant comet impact triggered volcanic eruptions which ejected metals from earth's interior to its outer surface. Thus, this geothermal event enriched the crust of earth with metals and minerals. The text of the legend should be recognized as the most ancient scientific statements in the world which describes how the metals such as gold, silver, copper, tin and iron originated in the crust of earth.

This specific giant comet impact event have played vital role in the evolution of earth. The most significant ramification of this giant comet impact event was that it delivered life sustaining molecules on the surface of earth. Consequently, this comet strike accelerated evolution of diversified forms of life on the earth over a period of time.

This comet impact event occurred when earth had started sustaining early types of grasses and plants. According to modern history of earth, timeline of this giant comet impact event is considered to correspond to Devonian period of Phanerozoic Eon (416 to 359.2 million years ago). We have also contextually inferred that Lake Mānsarovar had been formed within the round crater formed at the spot of the comet strike near the base of a high mountain identified by two names, Kailāsa (कैलास) and Haimavate (हैमवते). Modern science has not yet conducted any systematic investigations into the origin of Lake Mānsarovar and Mount Kailāsa. The legend presents a definite geological point of view that Mount Kailāsa and Lake Mānsarovar had formed on the surface of earth much before the rise of Himalayan mountain range.

Despite of being allegorical, the legend reveals a consistent series of cosmic, impact and geothermal events logically linked with their cause-and-effect relationships. It is amazing to think how the ancient text could visualise astronomical entity Kuiper Belt known to modern science only from 1992. The legend strongly supports a modern view that comet strike also delivered life sustaining molecules from outer space. The series of specific events revealed by this legend are not yet hypothesized by modern science. The super cosmic interaction and giant comet impact revealed by this legend is ingrained with significant clues, ideas, and deep insights which can be used to develop a model for verifying its validity in the modern context.

Keywords: Vālmīki Rāmāyaṇa, Impact events, Earth, Comet, Kuiper belt, Kārtikey, Agni, Ākāśagaṅgā, Life sustaining substances, Mount Kailāsa, Lake Mānsarovar, Metals, Gold

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Introduction

Kārtikey is an ancient divine being who is held in high esteem in continuing traditions of India.

The most ancient textual reference to Kārtikey exists in Atharvaveda, where Kārtikey is referred to as a son of Fire-God (*Kumara Agnihū*). The story of Kārtikey has been described in ancient epics of Vālmīki Rāmāyaṇa and Mahābhārata and in Puranic literature in a highly lucid and interesting manner. In our view, a legend of “The Birth of Kārtikey” in Vālmīki Rāmāyaṇa narrated by Sage Viśvāmītra is the most ancient and authentic textual account. In this article, we have decoded the text of the legend “The Birth of Kārtikey” given in the Bālākāṇḍa of the epic of Vālmīki Rāmāyaṇa. Outwardly, this legend appears to be related to be a story of surrogating birth of a new divinity named Kārtikey by intimate interactions between Fire-God (*Agniḥ*) and Sky-Ganga (*Akashganga*). This legend is multi-layered and embedded with ancient science related to earth’s evolution logically linked to the occurrence of a specific cosmic interaction in outer space. The knowledge in the text of the legend is coded. The ancient science embedded in the legend has been unravelled by deciphering the symbolism of

divinities and inner meanings of a few key Sanskrit words used in the text of this legend.

Legend: The Birth of Kārtikey

Several English translations of the Vālmīki Rāmāyaṇa are available¹⁻⁴. For this study, the Śrīmad Vālmīki-Rāmāyaṇa, published by Gita Press, Gorkhpur, India has been adopted as a base reference¹. For Roman Transliteration, the International Alphabet of Sanskrit Transliteration (I.A.S.T) has been used. In this study, numbering of each verse is given in the format of ‘Book.Chapter.Verse’ as in the base reference¹.

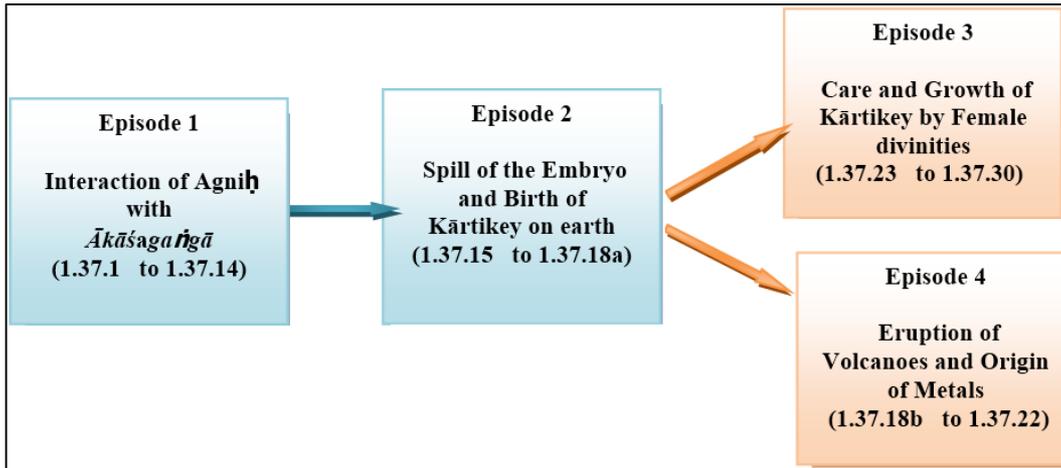
An esoteric legend of birth of the divinity named Kārtikey is narrated by Sage Viśvāmītra to Prince Rama in Bālākāṇḍa (Chapter 37¹⁻² and Chapter 36³⁻⁴ of Vālmīki Rāmāyaṇa. The text¹ of the legend is given in Table-1 for easy reference and to appreciate the allegory weaved to describe a series of major natural events which contributed significantly to the evolution of earth.

The legend of birth of Kārtikey is summarized in a series of four episodes shown in the block diagrams, as follows:

Table 1: Sanskrit Text Of Legend And Its Roman Transliteration

Vālmīki Rāmāyaṇa -Bālākāṇḍa-Chapter 37 : The Legend of the Birth of Kārtikey		
Verse	Sanskrit Text	IAST Transliteration
1.37.1	तप्यमाने तदा देवे सेन्द्राः साअग्नि पुरोगमाः सेनापतिमभीप्सन्तः पितामहमुपागमन् ॥	tapyamāne tadā deve saindrāḥ saAgniḥ purogamāḥ senāpatimabhīpsantaḥ pitāmahamupāgaman ॥
1.37.2	ततोऽब्रुवन् सुराः सर्वे भगवन्तं पितामहम् परणिपत्य शुभं वाक्यं सेन्द्राः साग्निपुरोगमाः ॥	tato'bruvan surāḥ sarve bhagavantaṁ pitāmaham praṇipatya śubhaṁ vākyaṁ sendrāḥ sāgnipuragamāḥ ॥
1.37.3	येन सेनापतिर्देव दत्तो भगवता पुरा स तपः परमास्थाय तप्यते स्म सहोमया ॥	yena senāpatir deva datto bhagavatā purā sa tapaḥ paramāsthāya tapyate sma sahomayā ॥
1.37.4	यदत्रानन्तरं कार्यं लोकानां हितकाम्यया संविधत्स्व विधानज्ञ तव हि नः परमा गतिः ॥	yadrānantaṁ kāryaṁ lokānāṁ hitakāmyayā samvidhatsva vidhānājña tvam hi naḥ paramā gatiḥ ॥
1.37.5	देवतानां वचः श्रुत्वा सर्वलोकपितामहः सान्त्वयन् मधुरैर्वाक्यैस्त्रिदशानिदमब्रवीत् ॥	devatānāṁ vacaḥ śrutvā sarvalokapitāmahaḥ sāntvayan madhuraivākyaistrīdaśānidamabravīt ॥
1.37.6	शैलपुत्र्या यदुक्तं तन्न प्रजाः स्वासु पत्निषु तस्या वचनमाक्लिष्टं सत्यमेव न संशयः ॥	śailaputryā yaduktaṁ tanna prajāḥsvāsu patniṣu tasyā vacanamākliṣṭaṁ satyameva na saṁśayaḥ ॥
1.37.7	इयमाकाशगंगा च यस्यां पुत्रं हुताशनः जनयिष्यति देवानां सेनापतिमरिदमम् ॥	iyamākāśagāṅgā cha yasyāṁ putraṁ hutāśanaḥ janayiṣyati devānāṁ senāpatimaridamam ॥
1.37.8	ज्येष्ठा शैलेन्द्रदुहिता मानयिष्यति तं सुतम् उमायास्तद्बहुमतं भविष्यति न संशयः ॥	jyeṣṭhā śailendraduhitā mānayiṣyati taṁ sutam umāyāstad bahumataṁ bhaviṣyati na saṁśayaḥ ॥
1.37.9	तच्छ्रुत्वा वचनं तस्य कृतार्था रघुनन्दन परणिपत्य सुराः सर्वे पितामहमपूजयन् ॥	tacchrutvā vacanaṁ tasya kṛtārthā raghunandana praṇipatya surāḥ sarve pitāmahamapūjayan ॥
1.37.10	ते गत्वा परमं राम कैलासं धातुमण्डितम् अग्निं नियोजयामासुः पुत्रार्थं सर्वदेवताः ॥	te gatvā paramaṁ rāma kailāsaṁ dhātumāṇḍitam Agniḥṁ niyojayāmaśuḥ putrārthaṁ sarvadevatāḥ ॥
1.37.11	देवकार्यमिदं देव समाधत्स्व हुताशन शैलपुत्र्या महातेजो गङ्गायां तेज उत्सृज ॥	devakāryamidaṁ deva samādatsva hutāśana śailaputryā mahātejo gaṅgāyāṁ teja utsrja ॥
1.37.12	देवतानां प्रतिज्ञाय गङ्गामभ्येत्य पावकः गर्भं धारय वै देवि देवतानामिदं प्रियम् ॥	devatānāṁ pratijñāya gaṅgāmabhyetya pāvakaḥ garbhaṁ dhāraya vai devi devatānāṁ idam priyam ॥
1.37.13	इत्येतद् वचनं श्रुत्वा दिव्यं रूपमधारयत् स तस्या महिमां दृष्ट्वा समन्तादवशीर्यत ॥	ityetad vacanaṁ śrutvā divyaṁ rūpam adhārayat sa tasyā mahimāṁ ḍṛṣṭvā samantādavśīryata ॥
1.37.14	समन्ततस्तदा देवीमभ्यषिञ्चत पावकः सर्वस्रोतांसि पूर्णानि गङ्गाया रघुनन्दन ॥	samantatastadā devīm abhyaṣiñcata pāvakaḥ sarvasrotāṁsi pūrṇāni gaṅgāyā raghunandana ॥
1.37.15	तमुवाच ततो गङ्गा सर्वदेवपुरोगमम् अशक्ता धारणे देव तव तेजः समुद्धतम् ॥	tamuvāca tato gaṅgā sarvadevapurogamam aśaktā dhāraṇe deva tava tejaḥ samuddhatam ॥
1.37.16	दह्यमानाग्निना तेन संप्रव्यथितचेतना अथाब्रवीदिदं गङ्गां सर्वदेवहुताशनः ॥	dahyamānāgninā tena saṁpravryathitacetanā athābravīdiḍaṁ gaṅgāṁ sarvadevahutāśanaḥ ॥
1.37.17	इह हैमवते पादे गर्भोऽयं सनिवेश्यताम्	iha haimavate pāde garbho'yaṁ saniveśyatām

	श्रुत्वा त्वान्विचो गङ्गा तं गर्भमतिभास्वरम् ॥	śrutvā tvAgnihhvacaṅgā taṃ garbhamatibhāsvaram ॥
1.37.18	उत्ससर्ज महातेजाः स्रोतोभ्यो हि तदाऽनघ यदस्या निर्गतं तस्मात् तसजांबूनदप्रभम् ॥	utsasarja mahātejāḥ srotobhyo hi tadā' naghā yadasyā nirgataṃ tasmāt taptajāmbūnadaprabham ॥
1.37.19	काञ्चनं धरणीं प्राप्तं हिरण्यमतुलप्रभम् ताम्रं कार्णायासं चैव तैक्ष्ण्यादेवाभिजायत ॥	kāñcanaṃ dharaṇīm prāptaṃ hiraṇyam atulaprabham tāmraṃ kārṣṇāyasam caiva taikṣṇyādevābhijāyata ॥
1.37.20	मलं तस्याभवत् तत्र त्रुपु सीसकमेव च तदेतद् धरणीम् प्राप्य नानाधातुरवर्धत ॥	malaṃ tasyābhavattatra trapu sīsakameva ca tadetad dharaṇīm prāpya nānādhāturavardhata ॥
1.37.21	निक्षिप्तमात्रे गर्भे तु तेजोभिरभिरञ्जितम् सर्वं पर्वतसंनद्धं सौवर्णमभवद् वनम् ॥	nikṣiptamātre garbhe tu tejobhirabhirañjitaṃ sarvaṃ parvatasamṇaddhaṃ sauvarṇamabhadvanam ॥
1.37.22	जातरूपमिति ख्यातं तदा प्रभृति राघव सुवर्णं पुरुषव्याघ्र हुताशनसमप्रभम् तृणवृक्षलतागुल्मं सर्वं भवति काञ्चनम् ॥	jātarūpamiti khyātaṃ tadā prabhṛti rāghava suvarṇaṃ puruṣavyāghra hutāśanasamaprabham tṛṇavṛkṣlatāgulmaṃ sarvaṃ bhavati kāñcanaṃ ॥
1.37.23	तं कुमारं ततो जातं सेन्द्राः सहमरुद्गणाः क्षीरसंभावनार्थाय कृत्तिकाः समयोजयन् ॥	taṃ kumāraṃ tato jātaṃ sendrāḥ sahamarudgaṇāḥ kṣīrasambhāvanārthāya kṛttikāḥ samayojayan ॥
1.37.24	ताः क्षीरं जातमात्रस्य कृत्वा समयमुत्तमम् ददुः पुत्रोऽयमस्माकं सर्वासामिति निश्चिताः ॥	tāḥkṣīraṃ jātamātrasya kṛtvā samayamuttamam daduḥ putro'yamasmākaṃ sarvāsāmīti niścītāḥ ॥
1.37.25	ततस्तु देवताः सर्वाः कार्तिकेय इति ब्रुवन् पुत्रत्रैलोक्यविख्यातो भविष्यति न संशयः ॥	tatastu devatāḥ sarvāḥ kārṭikeye eti bruvan putrastrailokyavikhyāto bhaviṣyati na saṃśayaḥ ॥
1.37.26	तेषां तद्वचनं श्रुत्वा स्कन्नं गर्भपरिस्रवे स्नापयन् परया लक्ष्म्या दीप्यमानम् यथा अनलम् ॥	teṣāṃ tadvacanaṃ śrutvā skannaṃ garbhparisrave snāpayan parayā lakṣmṃyā dīpyamānaṃ yathā analam ॥
1.37.27	स्कन्द इत्यब्रुवन् देवाः स्कन्नं गर्भपरिस्रवे कार्तिकेयम् महाबाहुम् काकुत्स्थ ज्वलनोपमम् ॥	skand eityabruvan devāḥ skannaṃ garbhparisravā kārṭikeyaṃ mahābāhuṃ kākutstha jvalanopamam ॥
1.37.28	परादुर्भूतं ततः क्षीरं कृत्तिकानामनुत्तमम् षण्णां षडाननो भूत्वा जग्राह सतनजं पयः ॥	prādurbhūtaṃ tataḥ kṣīraṃ kṛttikānāmanuttamam ṣaṇṇāṃ ṣaḍānāno bhūtvā jagrāha stanajaṃ payaḥ ॥
1.37.29	गृहीत्वा क्षीरमेकाहा सुकुमारवपुस्तदा अजयत् स्वेन वीर्येण दैत्यसैन्यगणान् विभुः ॥	grhītvā kṣīraṃ ekāhnā sukumāra vapus tadā ajayat svena vīryeṇa daityasainyagaṇānvibhuḥ ॥
1.37.30	सुरसेनागणपतिभ्यश्चित् महाद्युतिम् ततस्तममराः सर्वे समेत्यग्निपुरोगमाः ॥	surasenāgaṇapatiḥmbyaṣimcat mahādyutiṃ tataḥsta mamarāḥ sarve sametya Agniḥ purogamāḥ ॥
1.37.31	एष ते राम गङ्गाया विस्तरोऽभिहितो मया कुमार संभवः चैव धन्यः पुण्यःस्तथैव च ॥	eṣa te rāma gaṅgāyā vistaro'bhīhito mayā kumārasambhavaś caiva dhanyaḥ puṇyastathaiva ca ॥
1.37.32	भक्तषच्यः कार्तिकेये काकुत्स्थ भुवि मानवः आयुष्मान् पुत्रपौत्रौषच् स्कन्दसालोक्यताम् व्रजते ॥	bhaktaḥcayāḥ kārṭikeye kākutstha bhuvī mānavaḥ āyusmān putrapautraḥca skanda sālokyatāmvrjate ॥



In this article, we have decoded the ancient text of the legend to reveal its hidden knowledge and science in the following manner:

The ancient text of the legend has been organized into four sequentially connected episodes.

Thereafter, the text of each episode has been decoded by understanding the symbolism of divinities and by contextual meanings or symbolism of a few key Sanskrit words. It should be understood that, Sanskrit words or phrases have

immense potential for decoding as they have multi-fold meanings describing different qualities which can be used to identify an object, event and interactions.

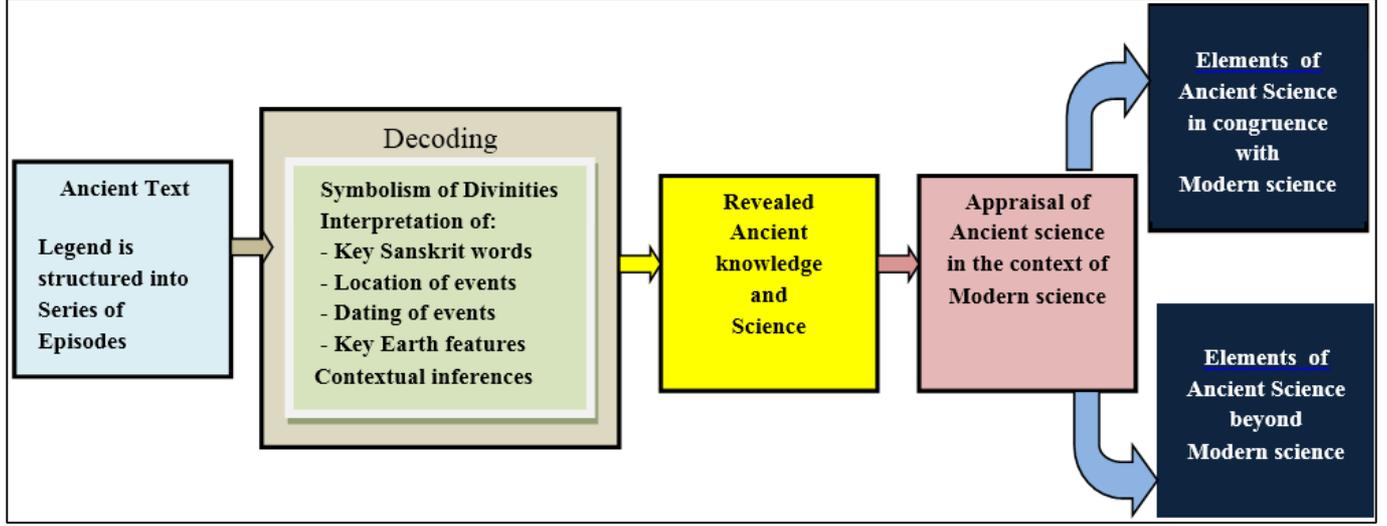
Divinities represent galactic entities or energies. The interactions between the divinities generally communicate occurrence of major natural events such as impact (collision) events⁵ and effects thereof, on the evolution of earth. The key features of earth indicated in the text of the legend are dated

by correlating with the modern knowledge about the history of evolution of the earth.

The decoded ancient knowledge and science has been appraised in the context of modern knowledge and science. Then, concepts or elements of the ancient science that have congruence with modern science have been identified. Some

other concepts or elements of the ancient science may be more advanced than modern science and have been alluded for their validation and research.

This legend has been decoded by using a scheme shown in block diagrams as below:



The legend allegorically describes a series of natural events with their cause-and-effect relationships as discussed below:

Episode 1: Super Interaction of Agniḥ with Ākāśagaṅgā (Event A: Super Cosmic Interaction)

Episode 1 of the legend is described in the texts of 1.37.1 to 1.37.14, as below:

Episode 1 is an allegorical text which describes a union between a male divinity *Agniḥ* अग्निः and a female divinity *Ākāśagaṅgā* आकाशगङ्गा for giving birth to a new divinity named Kārtikey in accordance with a cosmic plan devised by super divinity Brahmā. This part of the legend is summarized as below:

Long ago, Indrāḥ and all the gods fervently requested super divinity Brahmā to devise a plan to have a birth of highly valorous divinity who will be a great foe-conquering commander for the army of the gods and welfare of all the worlds (*lokānām hitakāmyayā* लोकानां हितकाम्यया in the text 1.37.4). Hearing the prayer of the divinities, Brahmā comforted them with soothing words. He told the divinities that there is absolutely no way for any of you to father children from your wives as all of you are under the inviolable curse of Umā. However, Fire-God (*Hutaashanaḥ* हुताशनः in the text 1.37.7) who has preserved the potent seed of Śiva can father a surrogate son through his interaction with female divinity *Ākāśagaṅgā*. The divinities expressed their gratitude and worshipped Brahmā for providing them a pathforward that would give them a new chief-of-army.

All the divinities assembled on Mount Kailās and authorized Fire-God to father a son through his union with *Ākāśagaṅgā*. Then, Fire-God approached *Ākāśagaṅgā* and requested her to get impregnated (*garbhaṃ dhāraya* गर्भं धारय in the text 1.37.12) by the potent seed of Śiva preserved inside him and help the divinities (*devakāryamidam* देवकार्यमिदं in the text 1.37.11). *Ākāśagaṅgā* agreed and assumed her divine female form. The text 1.37.14 describes how the male of divinity Fire-God impregnated female divinity *Ākāśagaṅgā* with the potent seed of Śiva, as follows:

समन्तस्तदा देवीमभ्यषिञ्चत पावकः
सर्वस्रोतांसि पूर्णानि गङ्गाया रघुनन्दन

*samantatastadā devīm abhyaṣiñcata pāvakaḥ
sarvasrotāmsi pūrṇāni gaṅgāyā raghunandana*

Translation: “O scion of Raghu (Rama), then the Fire-God impregnated *Ākāśagaṅgā* by filling her womb with all the streams (with the potent seed of Śiva preserved in his body)”

Episode 1 has been decoded as follows:

The text of the legend describes a specific event of a cosmic interaction in deep outer space between the male divinity Fire-God and female divinity *Ākāśagaṅgā*. The symbolisms of the female divinity *Ākāśagaṅgā* and of the male divinity *Agniḥ*: are explained below:

The Sanskrit word ‘*Ākāśagaṅgā* (आकाशगङ्गा)’ literally means *Gaṅgā* in outer space. This implies that *Ākāśagaṅgā* cannot be earthly *Gaṅgā* (गङ्गा) flowing in the laps of Mount Himalayas. *Ākāśagaṅgā* symbolizes an astronomical entity in outer space which possesses river like characteristics. *Ākāśagaṅgā* is explained in the text 1.35.23¹ of the *Bālākāṇḍa* in *Vālmīki Rāmāyaṇa*, as follows:

खं गता प्रथमं तात गतिं गतिमतां वर

khaṃ gatā prathamam tāta gatim gatimatām vara

Translation: “*Gaṅgā* (गङ्गा) cruised in the heaven (खं गता *khaṃ gatā*) with all moving things in it (गतिं गतिमतां वर *gatim gatimatām vara*) through a path granted by the sky”.

This above description of the *Ākāśagaṅgā* resembles an astronomical entity known as Kuiper Belt^[6] which flows like a river with trillions of small solar bodies (comets) in a band of orbits outside the planetary region. The Kuiper Belt is an area in the outer solar system that is stretched across 20 astronomical units (AU) of space. The contents of the Kuiper belt are thought to be the materials left over when the solar system was created 4.6 billion years ago^[7]. A comet that is not near the Sun consists of a nucleus composed of frozen water, frozen gases, and dust. Comets orbit the Sun along a very elongated path within the band of Kuiper belt. Part of its orbit is very far away from the Sun and a part of it is quite close to the Sun. When a comet comes close to the Sun, its nucleus heats up and releases a gaseous coma that surrounds

the nucleus. Thus there is always normal interaction between the emissions from Sun and Kuiper Belt.

Based on the above discussions, the female divinity *Ākāśagaṅgā* is inferred to symbolize an astronomical entity in the outer space, called Kuiper belt.

In the context of this legend, *Agniḥ* अग्निः (Fire-god) symbolizes huge energy bursts emissions from the Sun. According to the text, *Agniḥ* अग्निः had interacted with *Ākāśagaṅgā* in the form of *Hutāśanaḥ* (हुताशनः) in the text 1.37.11 and *Pāvakaḥ* (पावकः) in the texts of 1.37.12 and 1.37.14. The *Hutāśanaḥ* (हुताशनः) form of Fire-God is inferred to symbolize the huge energy bursts arising from the Sun, known as Solar Flares. The *Pāvakaḥ* (पावकः), the Fire-God in these verses symbolizes huge energy bursts from the Sun known as Solar Storms. Thus, *Agniḥ* (अग्निः) in the forms of *Hutāśanaḥ* (हुताशनः) and *Pāvakaḥ* (पावकः) symbolize the solar flare and solar storm which are known to be formed by rapid bursts of high-energy electromagnetic waves (radiations emitted by the Sun). NASA's Solar Dynamics Observatory has captured the pictures of the Sun emitting a huge solar flare on May 5, 2015⁸.

The interaction of the Kuiper Belt and Sun's emission in the deep outer space is visualised over simplistically in Figure 1.

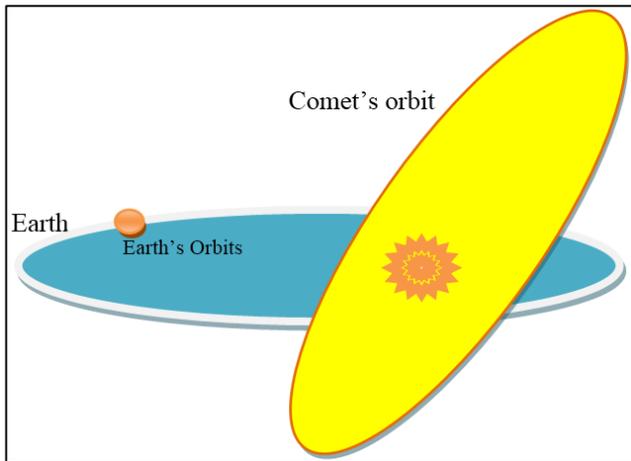


Fig 1: Interaction between Kuiper belt and Sun's energy.

Thus, the legend refers to a super cosmic interaction (Event A) of the Sun's abnormally strong energy bursts with an astronomical entity Kuiper belt^[6] as explained below:

Sun always has normal interaction with comets in the part of the Kuiper Belt that is close to Sun. However, the text of the legend describes a rare type of extremely strong interaction as it had occurred from all over and all the sides of the Kuiper belt. It was a specific event in which unusually strong energy bursts from the Sun in the form of a solar flare (*hutāśanaḥ* हुताशनः) and solar storms (*pāvakaḥ* पावकः) enveloped (*samaṁtataḥ abhyaṣiṁcata* समंततः अभ्यषिचत) the entire band (*sarvasrotāṁsi pūrṇāni* सर्वस्रोतांसि पूर्णानि) of the Kuiper belt (*Ākāśagaṅgā* आकाशगङ्गा). This strong interaction caused a major disturbance in the orbital movements of the comets bodies within the Kuiper belt.

This super cosmic interaction formed an embryo *garbhah* गर्भः in the womb of *Ākāśagaṅgā*. This embryo was extremely radiant (*mahātejah* महातेजः). It is postulated that a new giant comet (symbolised by *garbhah* गर्भः) was formed as a result of crashing and coalescing of smaller comet bodies within the

band of Kuiper belt. Then, newly formed giant comet changed its direction and drifted to a new path into inner solar system.

The decoding of this part of the legend thus reveals occurrence of a rare kind of a specific super cosmic interaction of huge solar energy bursts in the form of abnormal flares and storms with Kuiper Belt. Modern science recognizes the interaction of comet within the Kuiper belt when they come close to Sun in their elliptical orbit. Modern science also provides direct evidence of occurrence of the solar flares and storms. However, a specific event of the type of the super interaction and formation of new giant comet within Kuiper belt as revealed by this legend has not yet been captured and recognized by modern science. This super cosmic interaction could be a subject of deeper study and research.

Episode 2: Spill of the Embryo and Birth of Kārtikey on Earth (Event B: Giant Comet Impact)

Ākāśagaṅgā, who was carrying an embryo of Siva's son in her womb (*garbho* गर्भो), had to abort it prematurely due to reasons beyond her control. This part of the episode is described in the texts of 1.37.15 to 1.37.18, as follows:

While carrying a highly radiant embryo in her womb, *Ākāśagaṅgā* had been suffering from burning sensations and was losing her consciousness (*cetanā* चेतना). She spoke to Fire-God that she was unable to hold the radiant embryo (*tejah* तेजः) in her womb. Seeing the miserable condition of *Ākāśagaṅgā*, Fire-God advised her to spill her embryo on earth as described in the text 1.37.17, as follows:

इह हैमवते पादे गर्भोऽयं संनिवेश्यताम्

श्रुत्वा त्वाग्निवचो गङ्गा तं गर्भमतिभास्वरम्

iha haimavate pāde 'yaṁ saṁniveśyatām

śrutvā tvAgniḥhvacogaṅgā taṁ garbhamatibhāsvaram

Translation: "Place this embryo at the base of Mountain Haimavata. Hearing the words of Fire-God, *Ākāśagaṅgā*, then ejected that embryo possessing extreme refulgence from her womb."

As instructed by Fire-God, *Ākāśagaṅgā* ejected her extremely radiant embryo (*mahātejah* in the text of 1.37.18a) from her body. It struck earth, which lit up brilliantly all around him (*tejobhiḥ abhiramjītam* तेजोभिः अभिरंजितम् in the text of 1.37.21). The ejected extremely radiant embryo soon after landing on earth has grown to a newly born infant. It was the first birth of a new divinity on planet earth.

Episode 2 has been decoded as follows:

The part the legend reveals the ejection of newly formed comet (symbolized by गर्भः *garbhah*) from the band of the Kuiper belt. The interaction between Sun's energy bursts and Kuiper belt caused extreme disturbance in the orbital motion of the comet bodies within Kuiper Belt. As a consequence, one giant comet changed its direction and got tossed over from its orbit (*saṁniveśyatā* संनिवेश्यता in the text of 1.37.17) and it crashed on the planet earth (*dharaṇīm prāptaṁ* धरणीं प्राप्तं in the text 1.37.19).

The fall of a comet and its impact on earth is expected to be highly luminous event. The falling and smashing of comet *Shoemaker-Levy 9*^[9] on Jupiter in July 1994 was seen and photographed which confirms that it was extremely luminous event. It is significant to note the text of the legend described the extreme brightness of ejection, falling and smashing of a comet on earth by using the following superlative Sanskrit words:

Extremely refulgent like Sun (*atibhāsvaram* अतिभास्वरम् in the text 1.37.17)

Most bright, radiant and lustrous (*mahātejah* महातेजाः in the text 1.37.18)

Brilliantly lighted up (*tejobhirabhirañjītam* तेजोभिरभिरञ्जितम् in the text 1.37.21)

Radiant like fire (*dīpyamānam yathā analam* दीप्यमानम् यथा अनलम् in the text 1.37.26)

Glowing like fire (*jvalanopamam* ज्वलनोपमम् in the text 1.37.27)

The legend thus reveals a major impact (collision) event⁵ that occurred when a giant comet (symbolized by embryo of *Kārtikey* कार्तिकेय) was ejected from outer space and hit earth with a tremendously massive force. The ejection and falling of a comet from the outer space and its impact on the surface of the earth is described to be an extremely luminous event which is similar to other comet strike events known to mankind through modern science.

The location of comet's impact on earth is described in text 1.37.17. It was at the base of a high mountain named *Haimavate* हैमवते which in our views has been miss-translated to Mount Himalayas¹⁻⁴. Linguistically, Vālmīki Rāmāyaṇa discernibly uses the '*Himavat* हिमवत्' (derived from root word '*hima* हिम' means snow) for Mount Himalayas, not the '*Haimavate* हैमवते' (derived from root word '*haim* हैम' means gold). Our view is supported by the verse 4-37-2 in Vālmīki Rāmāyaṇa which refers to both Mount Himalayas and Mount Kailās in one phrase (*mahendra himavat viṃdhyā kailāsa śikhareṣu ca* महेन्द्र हिमवत् विंध्य कैलास शिखरेषु च). The location of comet strike is also stated in the text of 1.36.10 which states that all the divinities witnessed most spectacular cosmic impact event from the top of a high mountain Kailās (*te gatvā paramam Rama kailāsam dhātu maṇḍitam* ते गत्वा परमम् राम कैलासम् धातु मण्डितम्). It is inferred that Kailās (कैलास) and Haimavate (हैमवते) refer to same 'High Mountain' whose summit had unique crystal shape (Kailāsam कैलासम्) and shined like gold (हैम haim). It is surmised that this specific comet strike occurred at the base of a high mountain called Kailāsa or Haimavate.

Meteorites are known to enter earth's atmosphere frequently but entry of comets in planetary atmospheres is exceedingly rare event. There is a lack of knowledge about the root cause of comet hit on earth. Episode 2 has deeper scientific clues that provide a conceptual framework of a rare cosmic interaction that can toss a comet from its orbit and smash it on earth planet. It is to be noted that modern science has not yet come up with any hypothesis for a specific major comet impact event similar to the one inferred from this legend.

This giant comet impact event has played highly significant role in the evolution of earth which will be explained in Episodes 3 and 4.

Episode 3: Care and Growth of Kārtikey by Female Divinities (Event C: Evolution of Life on Earth)

Episode 3 of the legend describes the evolution of life on earth (symbolized by extraordinary care and growth of newly born boy) in the texts of 1.37.23 to 1.37.30, as below:

Upon landing on earth, the embryo became a newly born infant who possessed a great splendor like fire (*dīpyamānam yathā analam* दीप्यमानम् यथा अनलम् in the text 1.37.26, *jvalanopama* ज्वलनोपमम् in the text of 1.37.27) and high resplendence (*mahādyutimb* महाद्युतिम् in the text 1.37.30). He

was also ambidextrous (*mahābāhum* महाबाहुम् in the text 1.37.27). Indrāḥ and all the Maruts (*indrāḥ saha marud gaṇāḥ* इन्द्राः सह मरुद् गणाः) arranged six female divinities- *Kṛttikas* कृत्तिकाः stars to provide motherly care to the just born baby. *Kṛttikas* कृत्तिकाः offered milk (क्षीरं *kṣīram* in the text 1.37.24) soon after his birth and gave him a bath (*snāpayan* स्नापयन् in the text 1.37.26). Divinities named the newly born boy कार्तिकेय Kārtikey as Kṛttika-stars had suckled him. All the divinities also gave him second name *skamda* स्कन्द in the text 1.37.27 as he had spilled from the outpouring of the embryonic waters⁴ (*skannaṃ garbhaparīsaravā* स्कन्नं गर्भपरिस्त्रवे in the text 1.37.27). Kārtikey turned his head all around and made his one face into six-faces (*ṣaḍānāno* षडाननो in the text 1.37.28). He then simultaneously suckled the most nourishing milk (*kṣīram kṛttikānāmanuttamam* क्षीरम् कृत्तिकानामनुत्तमम् in the text 1.37.28) from the breasts of six mothers (Kṛttikas -stars). Kārtikey became strong adolescent in just one day and conquered a host of demons (*daitya* दैत्य). Then, all the divinities led by Fire-God (*Agniḥ*) consecrated him as their Chief of the Army (*surasenāgaṇapatim* सुरसेनागणपतिम् in the text 1.37.30).

Episode 3 has been decoded as follows:

The text referring to extraordinary care and growth of Kārtikey is highly allegorical and decoded by contextual symbolism. It is inferred *Kṣīramanuttamam* (क्षीरमनुत्तमम्) refers to life sustaining molecules that came to earth from outer space. It seems that six different types (symbolised by six-*Kṛttikāḥ*) of life sustaining molecules arrived on earth. These six essential types of life sustaining molecules caused rapid growth of life (symbolised by text of 1-37-29 *ghṛītvā kṣīramekahnā sukumāravapuṭadā* गृहीत्वा क्षीरमेकाह्ना सुकुमारवपुस्तदा which means the newly born Kārtikey who by suckling six types of wonder milks became an adult in one day). Consequently, over a period of time, geological, chemical and biological processes were initiated and made the earth gradually more suitable to sustain and rapidly diversify the life on the earth.

Thus, the text of the legend supports a modern view that life sustaining substances were delivered to the earth from outer space¹².

The text of Episode 3 is rich in describing the key features of earth at the time of comet impact (Event B) which can be dated based on modern knowledge of earth's history.

The text of this legend precisely states that earth at the time of comet impact was sustaining the early terrestrial plants (*trnavrṣlatāgūlmaṃ* तृणवृक्षलतागुल्मम् in the text 1.37.22). The text of the legend further refers to Rain-God and Wind-Gods (*sendrāḥ sahamarudgaṇāḥ* सेन्द्राः सहमरुद्गणाः in the text 1.37.23) and to the water bath (*snāpayan* स्नापयन् in the text 1.37.26) and mountain (*kailāsam* कैलासम् in the text 1.37.10a and *haimavate* हैमवते in the text 1.37.17a). All these indicate that earth surface had existence of the mountains, winds, rains, fresh water bodies. It is significant to note that the text of the legend neither mention flowers, glaciers, nor animal and human life which appeared on earth much later. It seems that these features of the earth fits as visualised in the modern history of earth for Devonian period of Phanerozoic eon (416 to 359.2 million years ago)⁷. It is inferred that at the time of the giant comet impact; earth was already embodying life sustaining substances, oxygenated atmosphere and warm temperature. However, the rate of evolution of life was limited to early type of grass and plants. This implies that the

earth was lacking in right ingredients needed for diversifying life. The comet impact event provided required type of life sustaining substances which diversified life on earth.

Episode 4: The Eruption of the Volcanoes and Origin of Metals (Event D: Geothermal Process)

The giant comet impact on the earth was an extremely high-energy event. Its instant effects are described in the texts of 1.37.18b to 1.37.22 of Episode 4. The impact of a giant comet was so powerful that it caused instant eruption of volcanoes and ejection of molten metal from earth's mantle to earth's surface.

Only two specific comet strike events are known to the modern science. The first comet had exploded over Egypt about 28 million years ago.^{9,11} It created fiery shockwaves and melted the sand, forming copious amounts of yellow silica glass scattered over 6,000 square kilometers of the Sahara. The second impact of the comet is known as Tunguska event^[10], which occurred in Siberia, Russia, in 1908. This incident involved an explosion that was probably caused by the airburst of an asteroid or comet 5 to 10 km above the Earth's surface. It caused felling of an estimated 80 million trees over an area of 2,150 km². Both these events demonstrate that comet impacts on earth are extremely powerful and cause enormous effects over a large area. The modern science concurs that a comet hit on earth has a potential to destroy land areas, produce tsunamis, affect climate, destroy ozone and cause mass extinctions. The impact of the giant comet on earth revealed by this legend was indeed a extremely high-energy event which caused instant eruption of volcanoes and ejection of molten metals from earth's mantle to earth's surface. The giant comet impact followed by eruption of volcanoes seems to be unique feature of this legend. Modern science has not yet visualised any specific event of comet strike that caused geothermal eruptions.

The text of the legend is very rich as it sheds light on some of the fundamental questions in modern science related to occurrence of metals and abundance of gold in the crust of earth, anomalies in geology of Mount Kailāsa and Lake Mansarovar, as discussed below:

Origin of Metals & Minerals in the Crust of Earth

How did the metals originate in the crust of the earth? This is one of the fundamental questions in modern science. The text of the legend explains how the metals and their minerals originated in the crust of earth.

The giant comet impact (Event B) caused extremely severe impact on the earth. It instantly triggered a fiery geothermal process which brought the eruption of glittering molten metal from the mantle of earth to its surface. This geothermal event is precisely described in the texts 1.37.18b, 1.37.19 and 1.37.20, as follows:

यदस्या निर्गतं तस्मात् तप्तजाम्बूनदप्रभम्
काञ्चनं धरणीं प्राप्तं हिरण्यमतुलप्रभम्
ताम्रं कार्णायसं चैव तैक्ष्ण्यदेवाभिजायत
मलं तस्याभवत् तत्र त्रपु सीसकमेव च
तदेतद् धरणीं प्राप्य नानाधातुरवर्धत

yatasya nirgatam tasmāt taptajāmbūnadaprabham
kāncanam dharaṇīm prāptam hiraṇyamatulaprabham
tāmraṁ kārṇāyasam caiva taiṣṇyādevābhijāyata
malam tasyābhavat tatra trapu sīsakameva ca
tadetad dharaṇīm prāpya nānādhātuḥavardhata

The above texts are translated as follows:

“That molten (*tapta* तप्त), golden (*jāmbūnada* जाम्बूनद) and glittering (*prabham* प्रभम्) material erupted (*nirgatam* निर्गतं) and has reached the earth's surface (*dharaṇīm prāptam* धरणीं प्राप्तं) and from that the gold (*kāncanam* काञ्चनं) and silver (*hiraṇyam* हिरण्यम्) had emerged. From that fiery process (*taiṣṇyāt* तैक्ष्ण्यात्), copper (*tāmraṁ* ताम्रं), iron (*kārṇāyasam* कार्णायसं), tin (*trapu* त्रपु) and lead (सीसकम् *sīsakam*) became oxidized (मलम् *malam*), this way, various other elements (*nānādhāturavardhata* नानाधातुरवर्धत) were also received by the earth (*dharaṇīm prāpya* धरणीम् प्राप्य).”

Episode 4 is easily decoded by understanding the correct meaning of key phrase '*taptajāmbūnadaprabham* तप्तजाम्बूनदप्रभम्' in the text 1.37.18b. In our view, this phrase precisely refers to the molten material that erupted from the interior of the earth which was molten (*tapta* तप्त), golden (*jāmbūnada* जाम्बूनद) and highly glittering (*prabham* प्रभम्). The molten metals were ejected from the interior of earth by a process called *taiṣṇyāt* तैक्ष्ण्यात्, which refers to a fiery geothermal process such as eruption of volcanoes.

It is specifically stated that molten material reached the crust of the earth (*dharaṇīm prāptam* धरणीं प्राप्तं in the text of 1.36.19a, *dharaṇīm prāpya* धरणीम् प्राप्य in the text of 1.36.20b). This molten material contained the metals which are identified by their specific names i.e. gold (*kāncanam* काञ्चनं), silver (*hiraṇyam* हिरण्यम्), copper (*tāmraṁ* ताम्रं), iron (*kārṇāyasam* कार्णायसं), tin (*trapu* त्रपु) and lead (*sīsakam* सीसकम्). These texts also recognized existence of many more metals (*nānādhāturavardhata* नानाधातुरवर्धत). All metals initially came out from inside the earth in their elemental form. Four metals namely gold, silver, copper and iron could retain their elemental form. The other two metals tin (*trapu* त्रपु) and lead (*sīsakam* सीसकम्) and many other metals (*nānādhātuḥ* नानाधातुः) could not retain their elemental form after their reaching the surface of the earth. These metals instantly reacted with earth's atmosphere and converted into their respective mineral (compound) forms (*malam tasyābhavat* मलं तस्याभवत्).

The six metals gold, silver, copper, iron, lead and tin by their specific names correspond to the most antique metals known to the mankind. **The text 1.37.18b to 1.37.20 of Vālmiki Rāmāyaṇa should be recognized and declared as the most ancient statements in the word's history of metals that describe the origin of metals and minerals on the surface of earth in a scientific manner.**

The text of the legend is very rich as it sheds light on some of the fundamental questions in modern science related to abundance of gold in the crust of earth, anomalies in geology of Mount Kailāsa and Lake Mansarovar, as discussed below:

Abundance of Gold in the Earth's Crust

Gold is an attractive metal. It is a valuable and highly sought-after metal since ancient times by all civilizations. The text 1.37.22 describes the main characteristics of gold (*suvarṇam* सुवर्णम्) as follows:

जातरूपमिति ख्यातं तदा प्रभृति राघव
सुवर्णं पुरुषव्याघ्र हुताशनसमप्रभम्

jātarūpamiti khyātam tadā prabhṛti rāghava
suvarṇam puruṣavyāghra hutāśanasamaprabham

Translation: “And ever since that time, Raghava, tiger among men, gold, lustrous as Agni, eater of oblations, has been known as Jātarūpa, formed-at-birth”.⁴

The colour and brilliance of gold is described similar to fire (*hutāśanasamaprabham* हुताशनसमप्रभम्) which is a highly appropriate metaphor. Gold is a "noble metal" because it does not react with air under ordinary conditions. This characteristic of gold is beautifully described by using Sanskrit word *jātarūpam* जातरूपम् which means it remains "formed-at-birth"⁴.

How did gold appear on the surface of the earth? This is current riddle and an important subject of modern research^{15,17}. When earth was formed about 4.6 billion years ago, its surface was heaving with volcanoes and molten rocks. Then most of the molten iron and iron loving-siderophile elements such as gold and precious metals had sunk down through the mantle to its core leaving lighter silicates on the surface. All the gold present on earth had gone into the core leaving the crust and mantle of earth devoid of gold and other precious metals. This is contrary to what we observe as gold is found relatively high in abundance in the crust of the earth. Gold is found within the veins of quartz rocks and river sands. Gold is also occasionally found in nugget form on earth's surface. Its average concentration in the earth's crust or lithosphere is approximately 5 parts per billion¹⁶ (ppb), and in certain sedimentary rocks it may achieve concentrations of up to 2100 ppb¹⁶. The occurrence of gold is also observed in most of the natural substances. It is even present in minor concentration in fresh water and seawater. The gold content is approximately 0.012 ppb¹⁶ in seawater, and it is slightly higher at 0.02 ppb¹⁶ in fresh water. Thus, the occurrence of gold is widespread.

The text of the legend allegorically sheds light on the relative abundance and wide distribution of gold in the crust of the earth. When a giant comet hit the earth, the text of the legend states poetically that all the surrounding vegetation such as grass, shrubs, creepers and trees of that forest turned into gold. (*ṛṇavṛkṣlatāgūlmaṃ sarvaṃ bhavati kāñcanam* तृणवृक्षलतागुल्मं सर्वं भवति काञ्चनम् in the text 1.37.22). In our view, this phrase refers to all the vegetation looking golden after receiving the high velocity mist spray of the molten gold that erupted from the volcanoes. This phrase also symbolically indicates wide distribution of gold on the surface of earth. Gold was delivered to earth through meteorites which were showered on earth from the outer space in the history of early earth^{15,17}. Then showered meteorites rich in gold and other precious metals entered into earth's mantle by gigantic thermal convection currents. These two events have occurred 3.8 billion years ago and hypothesized in modern science by the names "Late Heavy Bombardment"¹³ and "Late Veneer Hypothesis"¹⁴. This legend reveals that over a period of geological time, gold was ejected by volcanic action and got widely distributed over the surface of the earth.

Geological Anomaly of Mount Kailāsa

Mount Kailāsa rises up from the highest point of Tibetan Plateau. Its grandeur lies not in its height but in its distinct pyramidal shape and its solitary location. Mount Kailāsa sits alone far behind the six mighty mountain ranges of the Himalayas. Its location and summit are atypical of the Himalayan mountain range. It stands as an isolated individual merged in the background of the Himalayas. This mystic feature of Mount Kailāsa is the most significant geological anomaly which is not yet explained by modern science.

The text of the legend specifically refers to Mount Kailāsa in the verse 1.37.10a, as follows:

ते गत्वा परम राम कैलासं धातुमण्डितम्

te gatvā parvatam rāma kailāsam dhātUmāṇḍitam

Mount Kailāsa is described with a superlative adjective 'param परम्', an assembly point for the divinities and its summit possessing metallic sheen (*dhātUmāṇḍita* धातुमण्डित). This implies Mount Kailāsa was the most incredible and indescribable prominent feature on earth existing before the strike of a giant comet.

It is a characteristic of the Sanskrit language and of poetic style in Vālmīki Rāmāyaṇa, one divinity or object is addressed by different names expressing their different qualities and attributes. The text of the legend describes existence of a high mountain by two different names; Kailāsa कैलासं (means crystal) in the text of 1.37.10a and *haimavata* हैमवते (root word हेम means gold) in the text of 1.37.17a. The words Kailāsa and Haimavata describe the grandeur of the summit of a high mountain which has unique crystal-like (pyramid) shape and possesses metallic shine like gold. It is inferred that giant comet-strike occurred at the base of a high mountain Kailāsa. The text of the legend implies Mountain Kailāsa had originated on earth long before the event of giant comet strike.

Himalaya mountain range is the youngest mountain ranges on the planet earth. It was lifted in a series of stages 30 to 50 million years ago by the collision between the Indian and Eurasian continental plates along their convergent boundary. Geology of Mount Kailāsa is considered integral with the geology of Himalaya. This implies that Mount Kailāsa had originated along with the rise of Himalaya mountain ranges, say about 50 million years ago. However, this legend presents a contrasting view that Mount Kailāsa is not geologically integral part of the Himalayas range and Tibetan Plateau. Based on inference of this legend it is strongly suggested that modern science should conduct research to explain geological anomaly of Mount Kailāsa with regards to its solitary location behind the Himalayan walls and its peak which has almost perfect pyramid shape in contrast to Himalaya's peaks which are formed from folding action of the plates.

Origin of Lake Mānsarovar

Lake Mānsarovar situated at the base of the Mount Kailāsa at a height of 4,590 meters (15,060 ft). It is the highest fresh-water lakes in the world. It has relatively round shape with a circumference of 88 kilometres (55 miles) and a depth of 90 meters (300 ft).

The location of Mānsarovar at the base of the Mount Kailāsa is precisely described in Vālmīki Rāmāyaṇa in the verses 1.24.8b and 1.24.9a¹, as follows:

कैलासपर्वते राम मनसा निर्मितं परम्

ब्रह्मणा नरशार्दूल तेनेदं मानसं सरः

kailāsaparvate rāma manasā nirmitam sarah

Brahmāṇā naraśārdūla tenedaṃ mānasam sarah

Translation: "Rama, there is an incredible lake (*param sarah* परम् सरः) on the Mount Kailāsa (*kailāsaparvate*). It was created (*nirmitam* निर्मितं) by Brahmā within his mind (*manasā* मनसा). Hence, Oh tigerly-man (Rama)! it is called Mānasa Lake (*mānasam* मानसं)"

Lake Mānsarovar means 'Lake of Mind.' It was first created in the mind of Brahmā. Thus, creation of Lake Mānsarovar was linked to a cosmic interaction in outer space. It is inferred that creation of Lake Mānsarovar on the earth was a part of overall cosmic plan devised by Brahmā for the birth of Kārtikey (Episode 2). The birth of Kārtikey is described as follows:

इह हैमवते पादे गर्भोऽयं संनिवेश्यताम्

iha haimavate pāde garbho'yam samniveśyatām

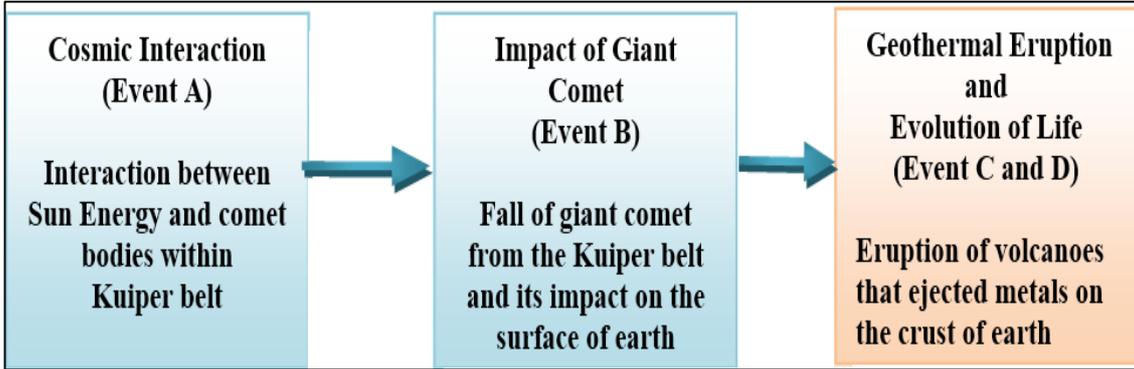
The birth of Kārtikey symbolizes the strike of a big comet at the base of a high Mountain Haimavate हैमवते which is another name of Mount Kailāsa. Based on the textual evidence and contextual inferences, we postulate that Lake Mānsarovar was formed within a crater (bowl-shaped cavity) formed by the hit of giant comet at the base of Mount Kailāsa about 416 to 359.2 million years ago. This crater was first filled with water brought by the giant comet. The lake remained filled with water by melting of snow from adjoining mountain ranges. Lake Mānsarovar has a round shape which is archetypal to other known big craters that are recognized to have formed by comet strike on the surface of earth. Modern science has not done adequate research about the origin of Lake Mānsarovar. The validity of the clues indicated

in the legends about the cosmic origin of Lake Mānsarovar deserves a deeper study by using modern tools and techniques by earth scientists.

Summary and Conclusions

The legend “The Birth of Kārtikey” narrated in Vālmīki Rāmāyaṇa is embedded with ancient history and science related to the evolution of earth at a stage when it just started to sustain life in the form of early types of plants and shrubs. This stage of life’s evolution on earth is known to correspond to Devonian period of Phanerozoic Eon (416 to 359.2 million years ago) in the modern history of earth.

This legend unravels a series of events linked with cause-and-effect relationships as shown in the following block diagrams:



The impact of a giant comet on earth occurred due to super cosmic interaction between extremely strong energy bursts emanating in the form solar flares or storms and comet bodies orbiting within a band of the Kuiper belt. As a consequence, one giant comet body got ejected from its elliptical orbit path and struck earth with massive impact. It triggered gigantic geothermal eruptions and ejected gold and other metals in molten state from interior of the earth to its crust. Modern science recognizes that comets had struck the earth many times but have not yet come out with any instance of specific comet impact that triggered geothermal eruptions similar to the one revealed by this legend.

The series of events revealed by this legend played major role in the evolution of earth. The giant comet impact delivered life sustaining molecules needed for rapid evolution of diverse kinds of life over a relatively shorter span of time.

The legend also provides significant clues about the geology of Mount Kailāsa and Lake Mānsarovar. Text of legend indicates that Mount Kailāsa had been the most prominent feature of earth much before the event of this giant comet impact. It is postulated that Lake Mānsarovar formed on the surface of earth at the base of Mount Kailāsa within a round crater formed by the hit of giant comet. The text of the legend presents a significant geological view that Mount Kailāsa and Lake Mānsarovar had their origin long before the rise of Himalaya’s mountain range. Geology of Mount Kailāsa and Lake Mānsarovar is not considered integral with the geology of Himalaya

This legend provides a direct answer to a fundamental question how the metals and minerals of heavier and precious metals originated in the crust of earth. Metals such as gold, silver, copper, iron, lead, and tin were brought to the crust of earth from interior of earth through gigantic volcanic eruptions triggered by impact of giant comet. The abundant occurrence of gold in the crust of the earth and its extra-terrestrial origin is supported by the legend.

Specific giant comet impact event revealed by this legend has not yet been captured by modern science. The legend is ingrained with significant advanced scientific clues, ideas and deep insights which are in the domain of hyper-physics, astrobiology, panspermia, earth and planetary sciences. Specifically concepts such as cosmic interaction that can toss a comet from its orbit and smash it on earth and geological inference that Lake Mānsarovar and Mount Kailāsa not being part of the Himalayas mountain range are highly significant. Ancient science revealed by this legend touches several current subjects of research and is suitable for computer modelling and sizing of the comet. It is recommended that this legend should be seriously studied by a team of traditional scholars and multi-disciplinary scientists.

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References

1. Śrīmad Vālmīki- Rāmāyaṇa. Gita Press, Gorakhpur, 1998, 70
2. Rao HanUmānta Desiraju. Valmiki Ramayana. 2008. <https://www.valmikiramayan.net>
3. Rao Subba VV. Valmiki Ramayanam, 2002. <https://www.valmiki.iitk.ac.in>
4. Goldman Robert P. The Ramayana of Valmiki: An Epic of Ancient India: Bālākāṇḍa, Princeton University Press, Princeton, 1994, 193-195 (Sarga 36).
5. ImpactEvents https://en.wikipedia.org/wiki/Impact_event
6. Kuiper Belt and Otor Cloud: Overview, Solar System Exploration. 2014. Retrieved from <https://solarsystem.nasa.gov/planets/profile>

7. Biological and Geologic Timeline of the Earth : www.scientificpsychic.com/etc/timeline/timeline.html
8. Nasa captures images of Sun's first major solar flare of 2015. Retrieved from <https://www.bbc.com/news/science-environment-31859690>
9. Howell Elizabeth. Shoemaker-Levy 9: Comet's Impact Left Its Mark on Jupiter, Space.com. 2013.
10. The Tunguska Explosion. 2014. earthsky.org/space/what.is.the.tunguska.explosion
11. Fazekas Andrew. First Evidence Found of a Comet Strike on Earth. National Geographic, 2013. Retrieved from <https://news.nationalgeographic.com>
12. Researchers claim that life arrived on the Earth via asteroids and comets, but not in the way you think: <https://www.extremetech.com/extreme/157617>
13. Late Heavy Bombardment. https://en.wikipedia.org/wiki/Late_Heavy_Bombardment
14. Primitive Mantle. https://en.wikipedia.org/wiki/Primitive_mantle
15. Willbold M, Elliott T, Moorbath S. The tungsten isotopic composition of the Earth's mantle before the terminal bombardment. Nature. 2011; 477:195-198.
16. Weick R James. Gold occurrences, Dept of Natural Resources, Newfoundland Labrador. 1994.
17. Kremer William. Does Gold Comes From Outer Space, BBC News Magazine, 2013.

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