

Kārmic Astrology : A Study

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**Under the Guidance of
Dr. Shripad Bhat**

February - 2017

Declaration

I hereby declare that the thesis entitled “**Kārmic Astrology : A Study**” completed and written by me has not previously formed the basis for the award of any Degree or other similar title upon me of this or any other University or examining body.

Place : Pune

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Certificate

This is to certify that the thesis entitled “**Kārmic Astrology : A Study**” which is being submitted herewith for the award of the Degree of Vidyavachaspati (Ph.D.) in the **Dept. of Sanskrit and Indological Studies** of Tilak Maharashtra Vidyapeeth, Pune is the result of original research work completed by Smt. Sunita Anant Chavan under my supervision and guidance. To the best of my knowledge and belief the work incorporated in this thesis has not formed the basis for the award of any Degree or similar title of this or any other University or examining body upon her.

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Sunita Anant Chavan

Abbreviations

Apte	:	Apte, V.S.
Ait. Brā	:	Aitareya-Brāhmaṇa
ĀpDS	:	Āpastamba-Dharma-Sūtra
ĀpGS	:	Āpastamba- Gṛhya- Sūtra
ĀpŚS	:	Āpastamba-Śrauta-Sūtra
ĀśGS	:	Āśvalāyana-Gṛhya-Sūtra
Ait. Up.	:	Aitareya-Upaniṣad
AV	:	Atharvaveda
BDS	:	Baudhāyana-Dharma-Sūtra
Bṛ. Jā.	:	Bṛhat-Jātaka of Varāhamihira
Bṛ. Saṁ.	:	Bṛhat-Saṁhitā of Varāhamihira
Bṛ. Up.	:	Bṛhadāraṇyaka-Upaniṣad
Chān. Up.	:	Chāndogya-Upaniṣad
Go. Brā.	:	Gopatha-Brāhmaṇa
HGS	:	Hiraṇyakeśi-Gṛhya-Sūtra
H/o Dh.	:	History of Dharmaśāstra
Jai. Brā.	:	Jaiminīya-Brāhmaṇa
JV (RV)	:	Jyotiṣa Vedāṅga of Ṛgveda
Kauṣ. Brā.	:	Kauṣitaki-Brāhmaṇa
KāŚS	:	Kātyayana-Śrauta-Sūtra
Kauṣ. Up.	:	Kauṣitaki-Upaniṣad
Mbh.	:	Mahābhārata
Mai. Saṁ.	:	Maitrāyaṇī-Saṁhitā
Mīm. Sū.	:	Pūrvamīmāṃsā-Sūtra of Jaimini
Mai.Up.	:	Maitrāyaṇī-Upaniṣad
Muṇḍ.Up.	:	Muṇḍaka-Upaniṣad
Pañ. Brā.	:	Pañcavimśa-Brāhmaṇa

PGS	:	Pāraskara-Gṛhya-Sūtra
RV.	:	Ṛgveda-Saṁhitā
Śat. Brā.	:	Śatapatha-Brāhmaṇa
Śān. Brā.	:	Śāṅkhāyana-Brāhmaṇa
ŚGS	:	Śāṅkhāyana-Gṛhya-Sūtra
Śvetā. Up.	:	Śvetāṣvatara-Upaniṣad
Tai. Brā.	:	Taittirīya-Brāhmaṇa
Tai. Saṁ.	:	Taittirīya-Saṁhitā
Tai. Up.	:	Taittirīya-Upaniṣad
Vāj. Saṁ.	:	Vājasaneyya-Saṁhitā
Yāj. Smṛ.	:	Yājñavalkya-Smṛti
Yogadarśana	:	Patañjali's Yogasūtras with the commentary of Kolhatkar.

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Chapter I

Introduction

1. Significance

The emergence and the developmental process of the correlation of Jyotiḥśāstra and the Concept of Karman significantly appear in divergent perspectives in the Veda and the later Sanskrit literature. Whereas Jyotiḥśāstra is based upon perceptive natural phenomenon of cosmic light forms and is thereby factual the Concept of Karman is presented as a philosophical notion resting on the ideology related to human. The growth of Jyotiḥśāstra occurred initially with a curiosity to understand the cosmic workings with observations of the spontaneity and also the order prevailing in the cosmos and later became a record of the calculations of the motions of the planetary bodies. Karma, on the other hand projected earlier the sacrifices and other ritual actions and later was associated with the moral actions of man. Whereas Jyotiḥśāstra in its early phase carried a primitive Indo-German legacy in the form of omens and portents also sharing an association with Babylonian and later on with Greek and Arabic Astrology, the growth of Karma theory was completely indigenous. The theory of Karma rest on the foundation that the physical and the moral actions performed by man become decisive as per their qualitative value and the soul transmigrate on account of these actions which accord it a specific motion in co-ordination with its deeds. This concept of transmigration associated with the rebirths of the soul is a uniquely Indian approach towards the question of action and its results.

In the culture, the correlation of Jyotiḥśāstra and Karma chiefly came forth to provide a perceptive base to the ideology of human regarding future along with its practical application. The cosmic activities in the form of divinations constituted a sign language revealing about future. An effort to understand the nature of time concerned with the correlation was also attempted by means of the ordered activity in the cosmos.

The correlation signifies an attempt to the erection of a moral theory by the culture. The factors contributing such an assumption on the cosmic side appears initially in the moral aspects of Varuṇa more so in the concept of the immortal gods as glorified human beings. An effort to perceive their veiled nature occurs initially in viewing stars or Nakṣatras as their abodes. An attempt of imitation also depicts in their anthropomorphized forms. The bifurcation of the cosmic qualities appears more systematized by characterizing the Nakṣatras and later on the Rāśis by means of which the human mind is visualized.

The correlation also worked as a means to understand the mechanism of Karma in human by the means of qualitative time. Sattva being the original form of human mind in accordance with the philosophy of the culture the qualitative time bifurcating the cosmic qualities was supposedly utilized for according a Sattva form to the mind. Karma equaled with motion in this sense and prescribed work on certain time can lead human to an evolved form also presupposes a basis for the correlation.

The correlation clearly worked in the culture to bring the abstract philosophy of the Vedic man into practical empiricism. Human discovered as of a Knowledge form by the culture an effort to derive the same with the aid of a natural basis is seemingly where the correlation is directed and where it united with the conceptions of Pantheism and Cosmogonism.

An extension to the probabilities of Evolution of human by means of individual effort with the aid of the correlation is also distinctly expressed in its preliminary form.

Also apart from the independent growth of Jyotiḥśāstra and the Concept of Karman in the literature the two correlated with each other for the core purpose of performance of ritual actions evident initially in the form of Sacrifices and later on the Muhūrtas for various cultural activities to be performed on specific times the mention of which occurs earlier in the Vedic and later in the Sanskrit literature.

2. Survey

In spite of the varied significance of the correlation of the earlier times, reading of the past actions and thereby the future of the obtained life by means of the planetary configurations in the sky charted in a Horoscope drawn from the time of the birth of an individual is where the two interact chiefly constituting the present form of the correlation.

In an effort to understand the disparities regarding life the theory of Karma postulates the idea of destiny (Daiva) which provides an explanation to the so-called predetermined course of events occurring in the life of a human. The impressions of past actions retain in a dormant state on the *citta*, the substratum in human structure connected with the storage of actions, and surface in the form of birth and the quality of life in an effort to achieve expression is also a fundament of the theory of which Jyotiḥśāstra of the present times provides a vision. Prior to this, the terms depicted different terminologies.

Daiva commonly occurring in the sense of accumulated actions of past lives of man (निर्दिष्टम् दैवशब्देन कर्म यत् पौर्वदेहिकम्। Caraka Saṁhitā,(Śārīrasthāna) IV. 1.116.) seemingly is from √ दिव्. 10.pp. ‘to suffer’. Etymologically it means that which pertains to the gods (devas) apparently derived from √ दिव्. I.4p. ‘to shine’. Mystically it is mentioned as *deva-guhyāni* (Mahābhārata. 3.32.33.) and appears as a cosmic law of cause and effect in accordance with which the actions of human are projected as the cause, the effect to which is labeled as the fruits received from the gods. (Śāṅkarabhāṣya on Vedānta Sūtra 3.2.41.) Daiva (mascu.) is also the science of omens and the divinations are the initial source to understand the intentions of the gods related to the future of man the interpretations to which already occur in the early Veda (RV.II. 42, 43.). The will of the gods also find an expression in the cosmic order of light forms termed as Ṛta which exist as the physical as well as the moral law prevailing in nature, the order depicting the organized pattern of the actions of nature. The deities following Ṛta reached immortality is a belief and which is also achievable by human on following the cosmic discipline is a line of thought which is perhaps one of the basis of the connection of cosmic time with the sacrifices and which is evident

in the statement of the Śatapatha Brāhmaṇa (X. 1.5.4.) related to the performance of the Agnihotra. The physical as well as the moral aspect of the cosmos is also evident in the system of the Nakṣatras which represent the physical distribution of the cosmos as well as a moral one based on the study of the characteristics of the cosmic activity. The Nakṣatra system existed with a practical utility in the culture and was the basis of the ritual activities of the culture. Up to the Upaniṣads, the branches of Jyotiṣa as Daiva and Nakṣatravidyā existed as the streams of Knowledge to be studied. (Chāndogya Upaniṣad VII. 1.2.,7.1.). Though such internal textual evidences divulge the varied concern of the subject with respect to the cultural activities, the earliest extent text on Jyotiṣa itself clearly represents as a treatise on Astronomy. The text expresses Jyotiṣa as a Vedāṅga proposing it as the science of laying down proper times for sacrifices as also coins Jyotiṣa and Gaṇita as synonyms. (Vedāṅga Jyotiṣa (RV) verse 35, 36.). This purpose of calculation of proper times became associated with Saṃskāra rites which continue till date as also continues the form of Jyotiṣa understood as Astronomy identified chiefly on the basis of the Siddhāntas and the relevant texts.

The Kārmic Eschatology connected to the native theory of the rebirths of the soul was given a perceptible basis by means of Jyotiḥśāstra by the Astrologers Garga, Varāha and the others. Though, this development of the reading of Daiva from Horoscopes appears nearby to the Christian era and is evidently post-Vedic. Also the influence of Greek Astrology on Horoscopy is noticeable though Daiva appears with other connotations earlier which align more closely with the Indian setup of the Correlation.

If Jyotiḥśāstra from the above survey reveals on haphazard branching in all directions over the period of time theory of Karma appears to be in a linear and an organized fashion in the literature. The term Karman extends earlier from the exploits of the deities (RV.I.22.19.) to the religious actions of men (RV.VIII.36.7). It exclusively refers to Yajñakarma in the Brāhmaṇas (Śat. Brā. I.1.2.1.) and with a extension as Knowledge (Vidyā) (Bṛ. Up. I.5.16.) reaches the moral sphere in the Upaniṣads (Bṛ. Up. IV.4.5.)also on account of which it shares an association with the

theory of Transmigration. A further advancement in the term and which separates oceans apart the term Karman as action is evident in the concept of non-action as an essential ingredient in the unity of the soul with the supreme principle. Apart from the above linear growth systematic categorization of the quality of actions and defining the meritorious ones as prescribed ritual actions inclusive of physical as well as moral ones is a procedure evident throughout the literature

As to the present status of Jyotiṣa, it dwindles around Horoscopy and such concerning means to understand about individual future on one hand whereas on the other side representing Astronomy it computes Muhūrtas for Saṁskāra rites and rectificatory rites. The Pañcāṅgas meant for such computations vary regionally and also appear with basic differences on matters such as the beginning of the year the variance reflecting in serving their purpose concerned with Dharmaśāstra. Other affairs of Astronomy such as the ideology related to the Sāyana and Nirayana computations, the question about precession as also the configurations related to the planetary motions which is the very basis of the Siddhānta texts are either subjected to rectifications on want of accuracy or are declared to be with shared interests especially with the Greeks.

The emergence of Karman as a doctrine though is starkly evident with its moral counterpart, the moral nature of actions and the conduct of human with respect to the same is a subject of constant scrutiny forming the principle bulk of the doctrine.

The prevalent form of Karman is subjected to this idea and receives a status of privilege on account of the constant attention provided to the theory by scholars of the subject with works of massive amount, evident on the same equally is popular amongst the masses as a code of behavior and more so as a topic of discussion and preaching.

Research Work done so far

Individual works on Jyotiḥśāstra and the Concept of Karman exist in substantial amount. Also works connecting Jyotiṣa and Karma, especially on matters of rectifications for future and for the reading of *Daiva* exist in ample forms. Though, no work connecting the two providing an explanation regarding the mechanism of the

making of future with the aid of the Correlation presently exists. The above situation clearly points to the requirement of a research.

Amongst the modern texts, the Census of Exact Sciences with its five volumes on the available material on Jyotiḥśāstra divulge works connected with actions of dāna, śāntis, vivāha, yātra, muhūrta and ample literature on Gaṇita. Computation of time (Kālanirṇaya) is also a topic sought by most of the authors for the purpose of rituals and other acts to which Pingree points out in his introduction to the fourth volume of the Census. Works on Jātaka originally by Varāha, Vṛddha Garga, Kalyāṇavarman and other authors with commentaries by Utpala and other commentators are presently available with commentaries and translations of modern scholars which reveal the form of correlation as providing a perception of the past actions of an individual by means of planets placed in his horoscope. Texts on the theory of Karma in its philosophical sense rarely refer to Jyotiḥśāstra one such reference occurs in the Doctrine of Karma, a collection of edited articles on the theory which possesses an article on Karma and Indian Astrology which deals with the above post-Vedic relation of past actions (Daiva) with Horoscopy. Dikshit in his treatise expounds texts and authors chiefly concerned with the Gaṇita branch with comparatively smaller sections on Saṁhitā and Jātaka branches. He mentions the importance of Gaṇita for Saṁhitā and Jātaka (p.11) which are the branches chiefly concerned with Karma. The systematic study of time was essential even in Vedic times for the purpose of sacrifices which were dependant on time thereby the purpose of calculations was essentially for the performance of ritual actions. This is being repeated by Histories on Vedic and Sanskrit literature and Weber (The History of Indian Literature, p. 263) mentions Astronomy springing out of Astrology. As a Vedāṅga, Jyotiḥśāstra retains its identity as a subject of study necessary for proper sacrificial employment of the Veda (History of Ancient Sanskrit Literature, p.56.). The survey of the literature reveals a connection of Jyotiḥśāstra with the concept of action in various senses much apart from its present form and in a thorough need of a research.

3. Aim

Jyotiṣa superimposes two different systems one is connected with heaven and immortality and the other with the destiny of the soul. Whereas the reading of the destiny of the present birth attempted by means of Horoscopy connected to the past actions of the soul and its future discourse is in practice presently the one with immortality and unity with the gods or later on with Brahman which is a part of the Veda is not much prevalent. Karma theory in its present form is chiefly associated with the nature of moral actions performed by human and their results though Karma had a cosmic as well as physical side to it earlier. The thesis attempts to reconstruct the above areas. Apart from which the further aims are also in consideration.

Consolidation and Singular Canopying

The Correlation of Jyotiḥśāstra with Action (Karman) appears to occur in different perspectives in the distinct phases of the culture. It shows an extension from the interpretation of spontaneous cosmic activity and the activities of the nature and light deities to human actions on specific times. It also exceeded to the evaluation of the past actions of human and thereby the future journey of the soul. Cosmic future is also a topic of consideration of the Correlation though the study of cosmos and its functioning for the evaluation of human and his destiny remain the prime intention behind the Correlation. Consolidation of the scattered form of the Correlation owing to its extent and singularly canopying it is the basic purpose of the study. Giving it a compact form is also one of the intent of the study.

Complete and Original Form

The prevalent form of the Correlation exists as the reading of Daiva (past actions) from Horoscopes and the other part concerns itself with the Dharmaśāstra purpose. A probe in the literature for its other areas in the earlier phases so as to expound its complete form as also to trace its nature more akin to the indigenous one is also an intention behind the study.

Utility of Time

The connection of time with the ritual actions is the fundament of the Correlation in the Veda and the later period. On account of which Jyotiṣa is labelled

as Kālavidhānāsāstra and appears as a Vedānga. The importance of the role of time in concern with the actions presupposes a mechanism on which the Correlation rests and which perhaps the culture was aware of. An effort to decipher the mechanism if any providing an explanation to the practical utility of time with respect to the Sacrifices and later on to the Muhūrtas for all sorts of religious rites is the chief aim of the interrogation.

Man Cosmos Relationship

Arrangement of human actions on cosmic time and evaluation of human past and future from cosmic activities are the basic forms of the Correlation. Man and nature share a relationship with each other is a belief of the culture. Study of the relationship concerned with the Correlation is thus a topic of inspection as human of the past has made an effort to carve his form by the aid of the cosmos as also has tried to locate himself in and beyond the perceptive world.

Social Aim

On account of the prevalent form of the Correlation as a vision of the past actions it represents fatalism and tends to promote a pessimistic attitude amongst the society. Also it projects itself as an investigatory means to human future rather than an applicatory one which is its original nature in the Vedic literature. The study thereby demands a reconstruction of its present facade for the sake of the society.

Heritage

Jyotiḥśāstra co-exists with the doctrine of Karman in the literature with a uniquely Indian setup. Astrology though was practiced by many ancient cultures there is no generally believed theory of Karma outside. The Correlation thereby carries an Indian legacy on account of which the study aims to understand the roots and the further progress for which a deep probe in the literature is attempted.

4. Methodology

i. Problem Statement and Hypothesis

The study proposes a Problem Statement and an Hypothesis.

Though the concept of future of a long and prosperous life in present body and heaven and immortality as an afterlife with an advanced light and knowledge form is repeatedly mentioned in the literature for which Jyotiḥśāstra shares an association with actions of all sorts in the culture, the actual mechanism at the interaction of man and cosmos with the aid of the correlation is sparingly discussed and nowhere is clearly mentioned in the literature. An effort to deal with the mechanism at the interaction and the role of the correlation in the event is attempted by means of the present study.

The study also attempts to indicate the direction of the correlation pointing to the evolution of man on the basis of the Hypothesis which propounds the derivation of a knowledge form out of the interaction. The exploration proceeds with the aid of the role of qualitative time and actions for an advancement in human form.

ii. Arrangement of Chapters

The pattern adopted to understand the nature of the Correlation of Jyotiḥśāstra and the Concept of Karman in the Vedic and the Sanskrit literature is as follows.

Chapter I is Introduction which is a brief survey of the study.

Chapter II deals with the explanation of the extent of the two chief topics, Jyotiḥśāstra and the Concept of Karman in the literature.

The sub-topics regarding Jyotiḥśāstra explain the derivation and the meaning of the term and proceed to locate the sources of light in the literature. The classification of Jyotiḥśāstra as also the extended areas of Jyotiḥśāstra are observed. The prime purposes of cultivation of Jyotiḥśāstra in the culture, its place and practical utility is also a consideration.

The Concept of Karman in the literature is studied as to its derivation, meaning and developmental nature. The sources and the effects of Karma are also considered. The sub-topic classifies Karma and attempts to understand its various

aspects and ultimately makes an effort to trace the common links between Jyotiṣa and Karman in the literature.

Chapter III explores the phase wise development of Jyotiḥśāstra with Karman in the literature. The development is distributed in five broad periods, the Saṁhitā, the Brāhmaṇa, the Upaniṣad, the Vedāṅga and the Varāha period. Every period introduces to the peculiarities of the period, the prevalent ideology, the individual development of Jyotiṣa and the Concept of Karman and their interaction on the above lines and finally summarizes expressing the salient features of the Correlation.

Chapter IV works on the Constructive Survey of the Correlation. It deals with the kinds of the Correlation and efforts to trace the central theme of the Correlation and its extent in the literature. It aims for the problem statement and a workable hypothesis. It efforts to locate a nucleus for the existence of the Correlation of Jyotiṣa and Karman. It leads to express Jyotiṣa as a device used by the culture to understand human and his future. It further progresses to study the Correlation of Jyotiṣa with the various forms of Karma as *Karmavipāka* or the fruition of actions and the other form of Karma concerned with ritual actions arranged on specific times. The philosophical extension of Jyotiṣa as an aid to the derivation of a light or knowledge form to human by means of actions as a probability of the Correlation based on a thorough survey of the evident data is also considered. The mechanism of man cosmic interaction seemingly aiming for a knowledge form to human and the probable role of the Correlation for such a transformation is presumably explained. The derivation of a Complete Knowledge Form expressing the unity of Jīva with the Supreme Ātman which is an extension apart from the Eschatology of Karman in its general terminology and beyond the supposed equable states seemingly located in the cosmic and human structure thereby presupposes different terminologies for Jyotiṣa and Karman than the prevalent ones. An effort is directed for such an explanation.

Chapter V is the Conclusion of the Research.

iii. Naming of the Thesis

The naming of the thesis demands further explanation. The name of the thesis Kārmic Astrology: A Study comes from a specific point of view. Jyotiḥśāstra is the

Indian name for Astrology. The concept of Karman as a special theory being absent in other cultures, the word Karman with the theory is without a suitable translation. Indian Astrology with the theory of Karman therefore is often known and referred as Kārmic Astrology. The present study began with this lookout of the Correlation.

The prevalent form of Indian Astrology is an intermingling with Greek Astrology on account of the Horoscopes. The adjective *Kārmic* applies to its *daiva* counterpart which the Indian Astrologers of the times like Garga and Varāha worked on providing the horoscopes an independent Indian setting and which is in usage till date. Presently the Correlation of Jyotiḥśāstra and Karman depicts an Indo-Western outfit which is also a reason for the present naming of the thesis.

A further glance at the Correlation reveals the other form of the existing literature as pertained to Dharmaśāstra which connect different rites to specific times for their performance leading to an ideal future. Also exist the texts on Gaṇita starting from the Siddhāntas on the basis of which the literature of Jyotiḥśāstra is divided into a scientific and pre-scientific period though Astronomy evolved out of Astrology is an observation of the modern scholars. The Samhitā and the Jātaka branches connected with actions are based on motions of the cosmic bodies and it is they who carry a practical utility in the culture. Thereby the function of Gaṇita is only to provide proper times work on which help achieve a desired future. The notion of future of human made dependable on specific actions on specific time provide to the Correlation a metaphysical angle on part of the doctrine of Karma and a scientific one an account of the concept of time derived by Jyotiḥśāstra. Also the stretch of Astrology beginning with the Indo-European elements right up to the prevalent Greek and the other intervening ones, it functioned with Karma as a specialized Indian term connected with scrutiny of all sorts of activities the cultural ideology could project and could singularly fit in the term *Kārmic*. And if the name Kārmic Astrology connects the ideology of Karma of a singular culture to the multidimensional Astrology of various cultures together it projects a study of actions and their results with a perceptible background and leads further to make understand human regarding his own form and his place in the cosmos on account of which it connects itself to a

theory of Knowledge which is beyond the boundaries of any culture. The name thereby accounts an appropriation in such an explanation as not being bound to any singular culture but to the entire mankind of past, present and future.

5. Scope and Limitations

The Correlation depicts a time when man was closely knit with nature and he believed his welfare to be dependent on it. The religion in this period therefore bind man to natural means in the form of worship. Gods thereby resided in stars and not temples and shared a give and take with human in the form of gifts and sacrifices and were located by perceptive means of path of the light bodies. The study holds a scope in the concept of rational study of cosmic and human structure and their co-ordinative functioning. The concept of cosmic time and its relation to the biological time in accordance with the code of conduct of human need to be studied by means of inferential logic. Such efforts already appear to be generated in fields like Archaeology working on the material remains of ancient men to excavate and erect their activities and thereby defining the terminology of culture. Also is inferential logic evident in the study of calculus by Newton or in the periodic table of elements by Mendeleev in their earliest forms. Thales (620 B.C.) expressed that the answer regarding the formation of the world lies in the study of the natural laws and the concept of Daiva (divine will) in the present context has a scope of study in such a direction. By labeling Daiva as a fruit by the gods, the culture points human actions to be the cause for the formulation of his present and future status. In the present form Astrology carries pessimistic attire and is presently a subject of blind faith or superstition. Such a fate was also suffered by modern Medicine prior to Hippocrates. Diseases were believed to be originating from black magic or such other sources as punishment by the gods and it was Hippocrates who showed that diseases were the product of environmental factors, diet and living habits. More nearer to the Correlation and what can be termed as a internal evidence appears in the form of Ayurveda which project diseases as the imbalance of the three humors in the body and connect the therapeutic treatment to natural medicines. It also believes diseases to be *Karmaja* inclusive of

bodily as well as mental factors which can be considered as a advancement over modern Medicine which generated efforts in the direction of mental disorders later to Sigmund Freud over last two hundred years after his study on the interpretation of the dreams. In the concept of mind with the operation of its three qualities leading to the variety of future there is a scope of a moral theory of Evolution or in the concept of *karmāśaya* erupting from an agricultural metaphor of seed lies evidently the concept of time and other contributing factors residing in man and cosmos for which the Correlation in the literature has worked on and has a scope for systematic study in many directions and could be connected to the present streams of Knowledge. Dikshit mentions the probability of many branches of material sciences existing in the Samhitā section and even Ptolemy (History of Dharmaśāstra, p. 553) connects factors as the country of birth, race, custom etc. important along with the horoscope in judging a man's futures. Therefore the study of the Correlation with present references is a necessity and perhaps has an access to interdisciplinary branching on account of its mercurial tendency. Astrology with Karma in the literature is esoteric and the biological evolution adds on with psychology and philosophy. In addition to the differentiated dimensions of space, time and form occurring in the literature which are presently the basis of all empirical sciences an effort needs to be generated with the help of the Correlation for a different lookout than the present one which could throw a light on the yet undiscovered areas of human form and its future. With such a scrutiny on its scope the present study was undertaken.

The two topics and their interaction have an unlimited extent in the literature on account of their varied dimensions in the culture extended over a period of time. Thereby the present study limits it selves to the nature of the Correlation from the man cosmic aspect and the eventual mechanism at their interaction decisive of the future of man.

Chapter II

Jyotiḥśāstra and the Concept of Karman

1. Preface to the Correlation

Astrology was practiced by many ancient cultures to look into the future. Divinations in those times were the means to interpret future. They supposedly originated from mimetic magic which ‘deduced the future of events from the behaviour of things’. (Religion and Philosophy of the Veda and Upaniṣads, p.388.). Magic was practiced by the Indo-European races with the belief that ‘by imitating the cosmic processes they could control or assist them’. (Magic and Religion, p. 82.). Actively performed actions played a role as an outsource of such a thought process though it was with the aid of the gods and the spirits who were fancied to be controlling the cosmic processes. Actions as prayers and sacrifices were directed towards these gods in order to pacify them. Till the period of the primitive Indo-Germans, magic appear to be separated from Astrology which constituted of omens and portents. (The History of Indian Literature, p.264.) Mythology also played a role in the formulation of Astrology though it surfaced as a product of activity of the human intellect thereby chiefly mental rather than a physical one expressing similar ideas, desires and habits in myths inspite of the difference in the cultural practices. The commonest myths pertained to the Sun and the Moon, the day and the night and the sky as explanations of the recurring natural phenomena in connection with the life and death of human. These were perhaps the first of the kind in conceptualizing the ideology of man regarding his connection with the other world as also of the course of the rising and the setting Sun providing the notion of rebirth of man thereby establishing a religious creativity resulting in the worship of the luminaries. The belief of existence and its travel outside the body is recorded in the Paleolithic through the Mesolithic continuing in the Neolithic population reflecting in their systems of burials orienting them towards the east displaying a tendency of connecting the destiny of the soul with the path of the Sun. (A History of Religious Ideas, Volume I, p. 33.). The idea of immortality also co-existed in the early cultures. The anthropomorphized

deities in all probability represented this idea and were commonly addressed as *deivos* (Skt. *Deva-s* originating from √ div ‘to shine’.) in the Indo-European period while were being connected with light and heaven (Vedic Mythology, p. 8.).

The same root contributed for the term day and also for the bright sky (The Origin of the Aryans, p. 324, 328.) and *Dyaus* a development as to sharing the divinity with the gods appears in the correspondence between the heaven and the earth by means of the cosmic light forms and their motion. The connection with light is evidently natural on the ground especially a moral one that man prefers light and shrinks from darkness which can be expressed as a man’s instinct rather than a religious one (Origin and Evolution of Religion, p. 106) and which reflects in the observance and worship of early man connecting Astrology with cosmic and human actions in the early period.

The idea of the order in the universe as a supreme law governing all the things in the world conceptualized as *Rta* also contributed to the correlation of cosmic order of the light forms to the ritual order in the Indo-Iranian phase. Although the concept of time displayed in the notion of *Rta* or *Aśa* connected with ritual actions have a utility as early as the Upper Paleolithic period which records the usage of a lunar cycle for a practical purpose.(A History of Religious Ideas, Volume I, p.22). Sacrifices though reported in somewhat similar period the worship of fire until the Indo-European times was animalist rather than anthropomorphic (Religion and Philosophy of Veda, p. 38). Intermingling of human qualities and actions with the cosmic activity is a development later to this and till the period of the Veda frequent association of man and cosmos for enquiries regarding future is evident and an organized system for the same in the form of divinations and actions on luminaries for their fulfillment occurs up to this period though the growth up to here can be termed as that of an adolescent standing on the verge of his cosmic habitat eager to surpass it and with the knowledge gathered from the habitat ready for a more mature footing for a better understanding of the roots of his own identity and their outcome.

2. Jyotiḥśāstra

Astronomy or Astrology is termed as Jyotiḥśāstra in Sanskrit literature and is defined as the knowledge or science of light.

i. Derivation of the term

The term *jyotiḥ* is derived from √dyut or √jyut¹ meaning 'to shine'. The √dyut followed by uṇādi suffix-isin² makes 'jyotiḥ' after the elision of 'n' and the substitution of 'j' for the initial 'd'.³ √dyut (to light) is used directly or in the causative sense for the formation of 'jyotiḥ'.⁴ The use of √jyut 'to shine' has been traced in Vedic literature only and in the late ages its use has become obsolete.⁵

ii. Meaning of the term

In the Vedic and later literature, the term 'jyotiḥ' appears in connection with that which shines. In this sense, 'jyotiḥ' comes in a widely extensive meaning in the literature. Jyotiḥ⁶ (n) means light, luster or brilliance, heavenly body or luminary, the celestial world, lightning, light of Brahman, the faculty of seeing. Jyotiḥ (m) means the sun and fire. The function of jyotiḥ is *prakāśa* that is to manifest, to illuminate or to dispel darkness.

In the above senses Jyotiḥśāstra constitutes the study of various light forms in nature and the term jyotiḥ⁷ appears in connotation with the above meanings in the literature.

iii. Sources of Light in the Literature

The initial light forms in the literature primarily observed due to their physical light nature in the sky are Sūrya, Candra and the Nakṣatras. Along with their appearances and character, they have a practical utility in the culture.

a. Sūrya

Sūrya is the material Sun and is marked by his effulgence in the sky. Sūrya is generated from the (brilliant) dawn (RV. VII.63.3), he shines forth and moves in the highest region of the Dyaus (RV I.50.11) in a singular path (RV. I. 164.14) is observed in the R̥gveda.

The chief action of Sūrya is his shining for all the world (RV. VII. 63.1), he is the dispeller of darkness due to his light (RV. X. 37.4) and is considered as the support of the world (RV.I 164.14).

Sūrya is attributed the quality of vision in the literature and is described as far seeing (RV. VII. 35.8, RV. X. 37.1), with his eye he views the world (RV. I 50.2). On account of such a characterization he is a prime light form. He is the eye of Medhya Aśwa (sacrificial horse) (Tai. Saṁ.VII.5.25.) and of various gods like Agni (RV.I. 15.1), Mitra and Varuṇa (RV.I.115.1, X.37.1, VII.61.1). In connection with human, the eye of man after death goes to Sūrya (RV. X. 16.3).

Being a prominently perceptible light form, the movement of Sūrya in the various divisions of the sky is observed in the culture and is made an instrument to measure the world.⁸ Sūrya never really rises or sets but due to its motion produces (the division of) day and night is mentioned in the Aitareya Brāhmaṇa (14.6). Saṁvatsara or Varṣa is a solar division in the Veda. Sūrya is the cause of Ṛtus (seasons) (RV. I. 95.3) is known, they being five (Mai. Saṁ.I.7.3) or six (Śat. Brā. II.1.3.16, AV. VI.55.2) find mention in the literature.

The apparent motion of Sūrya in the Northern and the Southern hemisphere for six months each is observed⁹ and the movement of Sūrya along with Candra in the twenty seven Nakṣatras and later the twelve Rāśi divisions is the basis of Jyotiḥśāstra as far as its practical utility is concerned.

The Ṛgveda¹⁰ declares the highest point of the Sun as the abode of the fathers. Sūrya is made a distinct mark to differentiate time with and without parts. An effort to connect Sūrya as the soul of all that moves and rests is observed in RV.I.115.1 and in connection with the Brahman world Sūrya does not (really) rises or sets but remains established in himself is mentioned in the Chāndogya Upaniṣad (III. 11.1,2). Thereby apart from the perceptible material form Sūrya was also viewed from an ideological perspective by the culture.

b. Candra

Moon is addressed as Candra or Canda, the terms which express its luminous nature and with the term Candramas moon is the luminous measurer¹¹. Often Candra

is addressed as Soma¹² and in the Ṛgveda the name shares a parallel¹³ with the personified terrestrial Soma plant and its juice. The light nature of Soma is expressed in RV. IX.86.45. Soma (juice) is addressed as ‘Śukra’ or ‘Śuci’, bright¹⁴ in its purified form or as ‘indu’¹⁵ the ‘bright drop’ or ‘drop’ (RV.VI. 44.21). Soma thus has a terrestrial as well as a celestial origin in the literature.

Candra receives light rays from Sūrya is known and is thereby addressed as *Sūryaraśmi* in the Saṁhitās.¹⁶ The birth of Soma from Sūrya is recognized and also its regular death. (RV.X.55.5, Tai. Brā. ii.5.7.3). The total disappearance of Candra on New Moon (Amāvāsyā) is observed and that it enters Āditya on this day is mentioned in Aitareya Brāhmaṇa (40.5). Months were lunar and in Vedic times compared to the *Amānta* (New Moon), months beginning or ending with the *Paurṇamānta* (Full Moon) were preferred (Tai. on Saṁ. 7.5.6). These phases¹⁷ formed the base for ritual actions including the performance of Darśapūrṇamāseṣṭi (sacrifices on the New Moon and Full Moon day). In the later literature, the position of Candra was the basis for Muhūrta (proper time) for the performance of any auspicious act. The Jātaka branch of Jyotiḥśāstra sets the pattern of Nakṣatras for the purpose of predictions of life of an individual and for the performance of actions, depending on the Nakṣatra in which the Moon at the time of birth of an individual is situated.¹⁸

Candra is associated with the Kālapuruṣa as his mind.¹⁹ In relation with the human journey after death, Candra is deemed a station for the performers of sacrificial actions and also the abode, eye and light of the fathers.²⁰

c. Nakṣatras

The system of Nakṣatras form the substratum on which Jyotiḥśāstra atleast of the Veda and Vedāṅga period rests. The term Nakṣatra appears in the literature as stars in general and also as lunar mansions.

As stars in general

The term Nakṣatra is applied to stars in general in RV. III. 54.19, VII. 86.1, other terms applied to stars in the early literature are ‘*stṛ*’, ‘*ṛkṣa*’ or *rocanā*.²¹ Specified by their bright appearance in the sky stars can be related to the words *stṛ*²² or *rocanā*²³

which is not the case with the word Nakṣatra which is of obscure origin and shows divergence of opinion in its derivation.²⁴

The term Nakṣatra appears distinguished from the stars in Tai. Saṁ. 7.5.25 which explains Nakṣatra as Rūpa (form) and Tārakā or stars as Asthi (bone) of the sacrificial horse.

Sūrya is addressed as a Nakṣatra (m) in RV.VI. 67.6, finds a separate mention along with the Nakṣatras (RV. III. 54.19) and also is contrasted from the Nakṣatras in a later hymn of RV and in other Saṁhitās (RV.I.50.2, AV XIII.2.17, XX. 47.14).

As lunar mansions

Compared to Sūrya or any other heavenly body, Candra shares an elaborate and somewhat exclusive relationship with the Nakṣatras in the literature. As far as the cultural ideology and its implementation is concerned, Nakṣatras appear as stars or star clusters on the path of the Moon. This sense already appears in the Saṁhitās.²⁵ They being 27 or 28 in connection with the lunar month is recognized, the expression arise in the form of a marriage union.²⁶

The arrangement of Nakṣatras

The names²⁷ of a few probable ones occur in the RV but the number fixed as 27²⁸ with the complete list of their names, order of appearance and the deities ascribed to them appear in and after the Yajurveda.²⁹ Though the record occurs in Taittirīya and other Saṁhitās yet much prior to them and in the time of the Ṛgveda, the Nakṣatra system must had been a functioning unit in the culture in connection with the sacrificial and other activities.³⁰

The shapes and colours of the star clusters³¹ visible in the sky may be attributed the stimulus for the names of the Nakṣatras occurring from prior lingo,³² or due to their coinciding with the natural phenomenon,³³ yet few others are named after the figures and the perceptive qualities of objects on earth appearing as their mirror images in the sky.³⁴ But certain characteristics attached to Nakṣatras in naming them probably generated from a thought process integrated since the earliest development of the culture³⁵ and is seemingly improbable to unwind.

The process of fitting the order of Nakṣatras arising in a natural succession on the path of the Moon to their counter parts on the Earth supposedly resulted due to an exchange from both the celestial and terrestrial factual as well as ideological quarters and somewhat stretching of the cosmic facts displayed in the concepts like the form of Nakṣatra Prajāpati visible in the sky.³⁶ Also the presiding deities of Nakṣatras mentioned in the Samhitās are exclusively Vedic³⁷ their anthropomorphism an independently Indian observation and retained their place in the later development.³⁸

Dikshit mentions the seed of auspiciousness or inauspiciousness of the Nakṣatras lying in the concept of Muhūrtas (proper times to perform acts).³⁹ The system of Nakṣatras is connected to Muhūrtaśāstra and is utilized for the performance of prescribed actions throughout the literature. Nakṣatras were considered important for Agnyādhāna⁴⁰ (consecration of the sacred fires), offerings were made on certain nakṣatras termed as male.⁴¹ Months were known from the names of Nakṣatras (Tai Samh. ii.2.10.1, Pañ. Brā. V.9.1), names of Nakṣatras were employed for Full Moon or New Moon (Śat. Brā. ii.6.3.11, Kauṣ.Brā.i.3, iv.4), Full Moon on certain Nakṣatra appears recorded (Śat. Brā.6.2.2.18) and prescribed for certain act (Tai.Samh. 7.4.38). A Nakṣatreṣṭi is also mentioned in Tai Brā.III.1.

The Bṛhat Samhitā enumerates actions to be performed on various types of Nakṣatras.⁴² In relation with marriage Gobhila prefers an auspicious Nakṣatra.⁴³ The Ātharvaṇa-Jyotiṣa (Nakṣatra section, verse 4) & Vaikhānasa-Ssmārta-Sūtra (IV.14) refer to a pattern of Nakṣatras in connection with the Nakṣatra at birth.

Nakṣatra as divisions of the Ecliptic

A third meaning of Nakṣatra as divisions of the Ecliptic appear in the literature especially for Astronomical purpose. The Sūryaprajñapti divides the Ecliptic by the sidereal month. The Vedāṅga Jyotiṣa records the positions of the Sun and the Moon at the Equinox and Solstices with reference to the Nakṣatras. In the Vedic literature, the Nakṣatra list began with Kṛttikā (which supposedly coincided with the Vernal Equinox)⁴⁴ and in the classical Sanskrit period it (Vernal Equinox) coincided with Aśvinī.⁴⁵ Apart from clear and ample references of above in the literature attempts have been made to mark the Nakṣatras at the Equinoxes and the Solstices and these

expressions have been utilized as a sequel to fix the age of the Veda.⁴⁶ The discovery of placing Mṛgaśīrṣa (Orion) or Āgrahāyana (as the commencement of the year) at the Autumnal Equinox⁴⁷ gave an access to a still older system of Nakṣatras prior to the Kṛttikā list which began with Mṛgaśīrṣa (Orion).⁴⁸ These references about the Nakṣatra in relation with the Equinoxes and Solstices show that the initial point of the sphere of the Nakṣatras was a movable point in comparison to the point of Equinox (and thereby the Solstices) which is a fixed point. The records to this extent awards the literature the knowledge of Precession to some extent.⁴⁹ Yet Precession which is an astronomical concept as also Nakṣatras being divided in twenty-seven equal parts of the ecliptic, these and such studies were perhaps not the aim of the culture but were preliminary steps to their astrological purpose of practical performance of prescribed actions on proper times.⁵⁰ Thereby the Nakṣatra which marked the initial point of the sphere and which coincided with the Vernal Equinox was perhaps equally observed from an Astrological viewpoint. The passage of the Śatapatha Brāhmaṇa which indicates the position of Kṛttikā at the Vernal Equinox also specifies the characteristics of the Nakṣatara and thereby its utility to the sacrificer.⁵¹

Some general observations from the above data in the literature related to the Nakṣatras can be derived as under:-

The formation of a Nakṣatra system and relating it to human actions exhibits the tendency of the culture

- 1) To connect the objects and activities of the sky or heaven and the Earth by means of study of characteristics of Nakṣatras.
- 2) To study the cosmic activity through the order of the Nakṣatras and introduce it to the activities of the culture.
- 3) To establish a practical connectivity to the Cosmos with the concept of Muhūrta (proper time) for sacrifices and other actions with the agency of the Sun, the Moon and the Nakṣatras.

The practical utility of the Nakṣatra System with ritual actions can be termed as a systematic attempt on part of the Vedic culture to establish a unity between man and cosmos through perceptible objects and means and thereby an actual or a concrete

effort to connect the same in the Saṁhitā and the Brāhmaṇa period prior to the Upaniṣads which rely on the abstract notions of the Brahman and Ātman.

Perhaps some theory or else a germ of a theory related to this unity existed in the culture in the above period. Nakṣatras are mentioned as the abode of the gods.⁵² Stars in general and even Nakṣatras are mentioned as the lights of pious men who depart to the heavenly world.⁵³ The Taittirīya Āraṇyaka 1.11.1.2 mentions the Saptarṣi's (the seven sages). Atri and Agastya as being raised to stars. These and such statements occurring occasionally in the literature point out a purposeful connectivity between Nakṣatras, gods and men.

As far as the derivation of the term Nakṣatra goes the Taittirīya Brāhmaṇa explains that one who performs sacrificial actions here goes to that (Nakṣatra) world⁵⁴ thereby explaining the characteristics of Nakṣatra as a place obtained by those who perform sacrificial actions here. (in this world). Yāska derives the term Nakṣatra from √ Nakṣ 'to obtain' or 'to go' from the above statement in the Taittirīya Brāhmaṇa.

The other derivation of the word Nakṣatra comes as a compound from the negative particle na plus Kṣatra meaning not a Kṣatra. Pāṇini VI. 3.75 derives it in this sense from Śatapatha Brāhmaṇa II.1.2.18.19. Kṣatra means dominion or power and therefore Nakṣatra or na plus Kṣatra means no dominion or no power. The word Kṣatra can be derived either from √ Kṣi to dwell, to rule, to decay or from √ Kṣar to move, to flow, to perish. Thus Nakṣatra would mean from √ Kṣi no dwell, no rule, no decay and from √ Kṣar no movement, no flow, no perish. The Tattvāmṛta commentary on the Sūrya Siddhānta 1.25 explains the word Nakṣatra as ‘‘na kṣarati na gacchātīti nakṣatram’’ in the sense that Nakṣatras have no movement. This meaning of Nakṣatra is nearer to Kṣar than Kṣi and thereby means no movement, no flow, no perish. Also Nakṣatra in this sense appears in many places in the early literature.⁵⁵ Therefore Nakṣatra appears to be more nearer to the above sense of √ Kṣar specifying ‘no movement’ or ‘no perish’.

From the above derivations, it appears that Nakṣatras were considered by the culture as ‘without movement’ or ‘non perishable’ or in a more direct sense of Na plus Kṣatra as ‘powerless’ (objects or places). RV. X.85.2 states that Soma

(Moon)lies in or is placed in the lap of the Nakṣatras. To ‘lie in’ specifies a horizontal position, a position at rest on a supporting surface⁵⁶ therefore Moon is deposited, situated or is at rest in the lap of the Nakṣatras. Also नक्षत्राणि वै सर्वेषां देवानामायतनम्। (Śatapatha Brāhmaṇa XIV.3.2.) or a similar statement in the Taittirīya Brāhmaṇa I.2.5.11. specify Nakṣatras as the abode of the gods and Tai. Brā.further says that the knower of this *abides*. Again abide is to remain (in the same place) or to stay in or endure⁵⁷ (with the gods).

Thereby Nakṣatras can be taken as non-movable or non-perishable residence or resting place of Moon, gods and (knower) mens. This is nearer to Pāṇini and Śatapatha Brāhmaṇa which explain Nakṣatra as a place with no dominion or power. Whereas the contrast in Nakṣ ‘to go’ or ‘to obtain’ by Yāska and Taittirīya Brāhmaṇa with Uṇādi suffix *atran* specifying ceaseless motion is applicable or related to the sacrificer or performer of prescribed actions who receives ceaseless motion due to the performance of actions and which land him or by aid of which, obtains the steady or stable stations termed as Nakṣatras.

Other important light forms are the Deities of light or the ‘Devatā’ which are the anthropomorphic forms of nature, the Grahas (Planets) which are of later origin and the universal and abstract light principle Brahman and its counterpart the Ātman.

d. Deities of light

The most prominent of the light forms in the initial literature are the deities on which rests perhaps the physical substrate as well as the moral character of the early Vedic culture. Vedic deities are anthropomorphized nature and light forms spread in the three regions viz, Celestial, Atmospheric or Aerial and Terrestrial areas of the cosmos.

Jyotiḥśāstra as the study of light constitute the study of the deities of light. Being anthropomorphized forms, the deities play a major role in explaining the nature and action of light in the early literature.

Celestial light forms

The parental celestial deity is Dyaus representing the actual or concrete sky in many places in the RV. Dyaus goes back to the Indo-European period and the word is derived from the √ div, 'to shine'.⁵⁸

The commonest light source appearing as a group of gods representing the celestial light is the Sun-god group.⁵⁹ Sūrya or Sun is the chief amongst these and closely associated to him are the Savitṛ, Mitra and the other Ādityas. The chief action of Sūrya is his shining for all the world,(RV.VII.63.1), for gods and for men (RV.I.50.5). Savitṛ again is a golden deity (RV.I.35.8,9; RV VI.71.3) with a golden car (RV. I.35.2,5) and the epithet *Sūryaraśmi* is exclusively addressed to Savitṛ in the RV. (X.139.1). The Ādityas are styled so since their real character is that they are the gods of the light of the heaven.⁶⁰ Varuṇa is the chief of the Ādityas with a shining robe (RV.I.25.18) and a shining car similar to the Sun (RV.I.22). He is the one who spread the Sun in the heaven (RV. V.85.2). Varuṇa is far sighted (RV.I.25, VIII.90) with thousand eyes (RV. VII. 34) and his viewing the world and mankind is connected to the moral aspect (RV. I.50.6), his watching all deeds is mentioned in RV. I.25.10,11. Varuṇa is the firmament and the physical Sun is the eye of Varuṇa and also Mitra (RV. I. 115.1, RV. I. 61.1), both are often associated with each other. Atharvaveda⁶¹ connects Mitra and Varuṇa with day and night respectively.

Apart from the Sun god group and the most brilliant of the celestial light forms is Uśas (Dawn) derived from √ vas 'to shine.' Uśas is a dispeller of darkness (RV.VI.64.3) while she arrives in her shining (RV.VII.78.1) bright (RV.III. 61.2) car. Uśas is closely allied with Sūrya, her shining associated with the light of Sūrya (RV.I.113.9)

Frequently mentioned amongst the deities of light are the Aświns. They are described as bright (RV.VII. 68.1), brilliant (RV.VIII. 8.2) and are addressed as the rulers of luster (RV.X. 93.6). Aświns often are associated with Sūrya.⁶²

Among other celestial light deities are Viṣṇu whose three steps are the rising, culminating and setting course of the Sun.⁶³ Pūṣan is also connected to the Sun.⁶⁴ (Íśa. Up. 15,16) and Vivasvant, a representation of Sun or the rising Sun⁶⁵ in the post Vedic

literature. In the R̥gveda⁶⁶ Vivasvant is called as an Āditya and Śatapatha Brāhmaṇa⁶⁷ explains him to be the illuminer of day and night. Visvasvant is connected with the human race and men are said to be his off springs. (Tai. Saṁ.6.5.6.2, Śat Brā. 3.1.3.4.).

Atmospheric deities associated with light

The Atmospheric deities share the light nature to a lesser extent compared to the celestial deities. Worth mentioning are Indra and Marut amongst whom Indra is described as golden (RV.I.7.2, RV.VIII. 55.3), with golden arms (RV.VII. 34.4). The Vajra of Indra is compared to the Sun (RV. VIII. 59.2), he has a golden car (RV. VI. 29.2) and is the winner of light (RV. VIII.78.4). The troop of Maruts are said to be brilliant (RV. I. 165.12), born from the laughter of lightning (RV. I.23.12), they ride on golden cars (RV.V. 57.1) which gleam with lightning (RV. I. 88.1, III. 54.13), they dispel darkness (RV. VII.56.20) and produce light (RV. I.86.10).They are said to prepare a path for the Sun (RV.VIII. 7.8). They represent storm-gods in the RV and with √ mar, ‘to shine’ accord best with their description.⁶⁸

Terrestrial light forms

Agni is the most important of the terrestrial light forms due to its association with the sacrifices which centered the Vedic cult. Agni holds a threefold character as a light form the terrestrial fire, the atmospheric lightning and the Sun in the celestial region or heaven.⁶⁹ He is threefold light is mentioned in early RV. III.26.7, his shine is compared to the Sun (RV.VII. 3.6). The descent of Agni from the heaven expressed in the form of lightening is personified as Mātariśvan.⁷⁰ As a terrestrial sacrificial fire he is designated with epithets which explain his bright form.⁷¹

An aspect of Agni is Bṛhaspati whose birth is from the light in the highest heaven (RV.IV.50.4.) Bṛhaspati is connected with the constellation Tīṣya (Tai.Saṁ iv.4.10.1.) and later in post-Vedic with the planet Jupiter.

e. Graha

The term Graha broadly and prevalently denotes Planet in Jyotiḥśāstra. The body of Navagraha⁷² or Nine Planets is a conglomeration of Sun and Moon, the five Planets proper and Rāhu and Ketu.⁷³ The Planetary system is commonly utilized for

Jātaka purpose⁷⁴ in present Jyotiḥśāstra and shows a blending of Indian and foreign elements.⁷⁵

Amongst the initial references to the probable Planets,⁷⁶ Bṛhaspati appears in the most clear sense.⁷⁷ The earliest mention of Planets occur in the Taittirīya Āraṇyaka⁷⁸ Śani, Rāhu and Ketu are referred in Maitrāyaṇi Upaniṣad (VII.6). Baudhāyana Dharmasūtra (ii.5.99) mentions all the nine Planets.⁷⁹ Mahābhārata (ii. 11.37) names them. Characteristics of Planets are mentioned in Bṛhat Jātaka. II., Arthaśāstra II. 24 connect Planets as predictive of natural events. The worship of planets is suggested by Yājñavalkyasmṛti (I. 307-308).

The motion of Planets was scientifically studied. The Vedāṅga Jyotiṣa records the motion and positions of Sun and Moon only and reference to the motions of other Planets occur from the period of the Siddhāntas.

Rāhu finds mention in the Atharvaveda (XIX. 9.10) but without an astronomical meaning is present also in the Chāndogya Upaniṣad (VIII.13) but not in the sense of a Planet. Both Rāhu and even Ketu, who is first mentioned in the Yājñavalkya, are Indian inclusions to the list of Planets and were understood as the head and tail respectively of the demon believed to be causing the eclipses.⁸⁰ Bṛhat Saṃhitā includes a chapter (chap.V) on Rāhucāra (Rāhu's course). तमः (M) means Rāhu and one of the meanings of तमः is darkness.⁸¹ The legend⁸² explaining Rāhu being cut off from the trunk yet on account of the Amṛta (nectar) consumed by him continued alive and became a graha also connects Rāhu with immortality and thereby with light. If taken as an astronomical point, Rāhu can supposedly be explained as a cosmic area with a mixture of darkness and light as considered by the culture.

Also one of the meanings of 'Graha', the term applied to Planets in general in the later period is connected to grasping or eclipsing of Sun and Moon⁸³ comes in association with Rāhu from the earliest times.⁸⁴

The term graha overall means 'seizing'⁸⁵ or seizer & comes in the sense of powers which hold the fates of men.⁸⁶ Weber mentions the term to be of Astrological origin.⁸⁷ Sun is addressed as a Graha in the sense of seizing in the Śat. Brā.(IV.6.5.1.).

The Bṛhadāraṇyaka Upaniṣad (iii. 2.2-9.) addresses the organs as the *grahas* and the corresponding objects as the *Atigrahas* and with graha meaning seize Keith⁸⁸ points out the possibility of the soul fettered by the organs and their activity thus adding a philosophical meaning to the term.

Through the horoscopy or Jātaka branch planets are also connected to the past actions (actions done in previous lives) of men.⁸⁹ Thereby attributing the cause of rebirth and overall life to the past actions of men and not to the planets.

f. Brahman and Ātman

Brahman and Ātman are the most abstract of the light forms in the literature. Brahman is of the nature of light and is explained in the Upaniṣads as the immortal cosmic light principle or cosmic fire.⁹⁰ Thereby Brahman is expressed as the light of lights and thus the source of light in the universe.

Being an abstract light form various representations expressing the light nature of Brahman are sought for in the literature. Whereas Brahman (n) is the first principle, Brahman (m) also equated with Hiraṇyagarbha is expressed as the first born of creation⁹¹ and the former being the soul of the universe the latter is its body. Hiraṇyagarbha is one of the twenty one names of Brahmā or Brahman.⁹² He is addressed as the golden womb or golden egg from which the world originated⁹³ and is stated as one who ascribes names, actions and states to the created beings.⁹⁴

Prajāpati appears as a representation of Brahman. Prajāpati the abstract creator god is also addressed as Hiraṇyagarbha in RV.X. 121.1. The three lights Agni, Vāyu and Āditya are produced from the three worlds created by Prajāpati. Identification of Prajāpati with the year and thereby with time or the timed form of Brahman and arranging actions on its parts is a development which the Brāhmaṇas inflate, prior to the Upaniṣads which also endeavoured on the timeless form of Brahman.

More materially is Brahman identified with the physical Sun.⁹⁵ In this sense Brahman is the Sun of the universe and the material Sun is explained as the phenomenal form of Brahman. Since Brahman being inherent in the Sun as the first principle, the Chāndogya Upaniṣad. (III. 19.1.) makes Sun as an object to be worshipped as Brahman.

Whereas the cosmic Brahman is fire or cosmic fire (jyotis),⁹⁶ Ātman or the fire which composes the self of the individual is metaphorically represented by the power of thought.⁹⁷ Both Ātman and Brahman are compared to smokeless flame or fire whose fuel is consumed. (Śvetā. Up.VI. 19., Mai. Up.VI.34). Representation of Sūrya or Sun as the self of that which stands and moves also occur in the early literature.⁹⁸

g. Regions of light

The Puruṣasūkta addresses the three divisions of the cosmos, Dyaus, Antarikṣa and Pṛthvi.⁹⁹ These regions pertain to brightness and are addressed as the three Dyaus.¹⁰⁰ More localized is Heaven as a region of eternal light. (RV.IX. 113. 7-9). It is expressed as the highest luminous world. (AV. IV. 34.2)

h. Path of light

Chāndogya Upaniṣad IV. 15.5 describes devayāna (way of the gods), the path of light which leads the souls of the dead.

iv. Classification of Jyotiḥśāstra

Jyotiḥśāstra is divided into three Skandhas (branches) I) Gaṇita or Siddhānta II) Saṁhitā or Śākhā and III) Horā or Jātaka.¹⁰¹

I) Gaṇita

Gaṇita branch deals with the study of movements of heavenly bodies by means of calculations.¹⁰² The development of this branch of Jyotiḥśāstra is divided chiefly in two phases A) the Veda and Vedāṅga Period and B) the Siddhānta Period. The later or the third phase is the period of the Karaṇa texts.

A) Gaṇita of the Veda and the Vedāṅga Period

The Veda and the Vedāṅga Period extends from the oldest of the Saṁhitās up to the Smṛtis and the Epics.¹⁰³

a. Units of time

Gaṇita of the Veda and the Vedāṅga Period is primarily a record of the natural divisions of time based on the motion of the Sun and the Moon. Ṛtus (seasons), a natural division of time and on which depended the extent of the Vedic year, were discovered to be five or six. (Mai, Saṁ. I. 7.3, AV VI. 55.2). Vasanta is the first of the Ṛtus¹⁰⁴ and marks the beginning of the year a Ṛtu being a solar division of time, the

year is naturally solar with 12 months, 360 days or of 720 days and nights together.¹⁰⁵ The six seasons were distributed amongst the twelve months.¹⁰⁶

The apparent motion of the Sun observed for six months each in the Northern and the Southern parts of the hemisphere was recorded¹⁰⁷ and a day named Viṣuva which marked a day and night of equal length which was placed in the middle of the sacrificial year was already discovered in the Brāhmaṇa period.¹⁰⁸

The culture followed a lunisolar calendar and the lunar months occurring in one solar year were observed. They being twelve in number is mentioned in RV. I. 25.8 and were preferably counted on the basis of Full Moons (Tai. Saṁ.VII.5.6). An additional thirteenth intercalary month also finds mention. (Tai. Saṁ.IV 6.7.1-2, Kauṣ. Brā. 19.2). Tithi, a lunar measurer of time specifying a day and night characterized by the daily rising and setting of Moon is recognised.¹⁰⁹

The division of a day depended on the Sun and was either from Sunrise to Sunset or from one Sunrise to the next one including a day and a night together termed as an Ahorātra. Such broad divisions of a day as 2, 3 or 5 parts occur in the literature and division of a day (and night) in 30 parts is also mentioned.¹¹⁰ Atharvaveda (9.6.46) records the sandhi (joints) of the divisions of the day. A small division of time termed as Abhijit characterized by an (almost) still shadow which constituted the eighth Muhūrta of the day was found out.¹¹¹ Certain minute divisions of time are recorded in the Vedāṅga literature.¹¹² Similarly calculations of long time spans such as Yuga,¹¹³ Kalpa and Manvantara also occur which are employed to specify the comparative time differences between gods and men.

A Saṁvatsara (year) of man is equalled to a day of the gods.¹¹⁴ Sahastra (one thousand) Yuga are equalled to a single day of Brahmadeva (Nirukta 14.4). Later in the Purāṇa literature the fourteen Manvantaras together constitute a Kalpa which makes one day of Brahmā¹¹⁵ Manusmṛti (I. 68-86) provided an elaborate pattern of Yuga which was followed by the later Jyotiṣa texts.

These calculated year reckonings were practically employed to express important events. Āryabhaṭṭa in Āryabhaṭṭavarṇam refers to the commencement of Mahābhārata war at the end of the Dvāpāra Yuga. Also the characteristics of different

Yugas and the events occurring in them are expressed in Manusmṛti and Purāṇa literature.

b. Study of motions of Sun and Moon

The Kārajñāna or the Knowledge of Time in the Veda and the Vedāṅgā period was chiefly dependent on the motion and positions of the Sun and the Moon, their positions in the various quarters of the sky and with each other with reference to the Nakṣatras. These were essential for the purpose of calendars related to sacrificial activities¹¹⁶ especially for the Darśapūraṇamāseṣṭi to be performed on the *parvasandhis* (joints) of the New Moon and the Full Moon. The mean longitude of the Sun and the Moon were studied to calculate these *parvasandhis*. Study of Planetary phenomenon other than Sun and Moon is absent up to and in Vedaṅga Jyotiṣa,¹¹⁷ the oldest extant text on Gaṇita.

The positions of Sun and Moon were marked with reference to the Nakṣatras which in relation with the Gaṇita branch of Jyotiḥśāstra appear as twenty seven equal divisions of the ecliptic or as measurement of arcs on the ecliptic of 13^o20' each¹¹⁸ beginning with the Vernal Equinox.

c. Ayana and Saṃpāta

Ayana (solstices) and Saṃpāta (equinoxes) are certain surface markings in the sky naturally created due to the motion of the Sun and the Moon and which were recorded with reference to the Nakṣatras and the fixed stars in this phase of the literature.¹¹⁹

i. Ayana (Solstice)

An Ayana¹²⁰ (Solstice) marks the initial point of the apparent course of the Sun in the Northern and Southern hemisphere. Vedāṅga Jyotiṣa records the initial point of the Northern progress of Sun (located with moon) in Śraviṣṭhā (Dhaniṣṭhā) and the beginning of the Southern progress in the mid of Āśreṣā.¹²¹

ii) Saṃpāta (Equinox)

The Saṃpāta or Equinox is an Astronomical point which marks the junction (or is an intersection) of the Ecliptic and the Equator. Factually this occurs twice in an year. The Astronomical sense occurs late in the literature and denotes the point of

time when days and nights are equal. The Equinox is termed as Viṣuvat and Kaye renders it as ‘a point of equal separation.’¹²² The Aitareya Brāhmaṇa¹²³ records a day named ‘Viṣuvat’ which marked a day and night of equal length and was connected with the sacrificial activities.

Though the Nakṣatras come in an astronomical set up and expressly mark the Ayana, the Nakṣatra list which begins with Kṛttikā in the Vedāṅga Jyotiṣa occurs in accordance with their deities¹²⁴ thereby showing a marked connection of Gaṇita with Dharmaśāstra.

Peculiarities

Vedāṅga Jyotiṣa a text on Gaṇita exists as the first extant one of this period sought especially for sacrifices to be carried on the *parvasandhis*.¹²⁵ The study of *parvans* advanced in the Veda and the Vedāṅga period to the extent that refined observations as eclipses occurred at the end part of the *parvan* was acknowledged in this period.

The Sūryaprajñapti a contemporary and later text which displays a similar astronomical pattern to Vedāṅga Jyotiṣa furnishes the concept of Mount Meru, placed at the centre of the Earth which obstructs the light of the heavenly bodies moving parallel to the surface of the Earth. It offers that centre’s of the orbits of heavenly bodies are at the Meru and that Sun revolves round mount Meru at the same height (from the plane of Earth) but at different distances from Meru. These and such calculations based on a centralized Meru reveals that Gaṇita (calculations) of the Veda and the Vedāṅga period rests on an ideological quarter rather than an actual one.

This notion of Meru appears in a generalized form in the Purāṇa literature which make Meru as a dwelling place of the gods.¹²⁶ Even Bṛhat Samhitā XXIV.2. mentions the grove of Mount Meru, as the abode of the *Devas* for which were displayed the laws of the Rohiṇi Yoga by Nārada to Bṛhaspati and later by the astrological teachers to their disciples.

Post-Greek Astronomers like Āryabhaṭṭa and Brahmagupta also comment on mount Meru. Āryabhaṭṭa mentions that Meru had no absolute height. Such reference retained the character of Jyotiṣagaṇita even after the advent of the Greek additions as

pursuing the conventional idea of calculations of a region or a cosmic point which was perhaps without an astronomical base and which followed or was secondary to answer or implement an idea rooted in another quarter of the culture.

After the Veda and the Vedāṅga period there is a dark age in the development of Jyotiḥśāstra inclusive of the Gaṇita branch in which lie works like Arthaśāstra (2.20) and Śārdūlakarṇāvadāna (Divyāvadāna 33) which display Gaṇita similar to the Vedāṅga Jyotiṣa but these are not exclusively based on Gaṇita.

A striking feature of the Gaṇita up to this period is that it, calculate the mean longitudes of the Sun and Moon with reference to the Nakṣatras and there is an absence of mention of planets and the zodiacal signs. Also if Vedāṅga Jyotiṣa is a text on Gaṇita it is chiefly a text on Jyotiṣa in both senses as a representation on the earlier form of Jyotiṣa as well as of its purpose. It can be termed as a pioneer of the later Siddhāntas and can be termed as the first of Siddhāntas being the only one on Gaṇita in the known history of the Veda and the Vedāṅga period. Yet it starkly differs from the Siddhāntas as they neither carry the form nor the purpose of Jyotiṣa in its complete and true sense.

The phase between the two main astronomical periods, the Veda and the Vedāṅga period and the Siddhānta period can be perhaps in this sense termed as a dark age in which there is no clear evidence which reveals the collapse of the facade of Jyotiṣa Gaṇita of the prior period and the emergence of the latter one.

A. Period of the Siddhāntas

The advent of the Siddhāntas bifurcate the Gaṇita branch of Jyotiḥśāstra into pre-scientific and scientific period.¹²⁷ Gaṇita branch is also termed as the Siddhānta branch. Siddhāntas chiefly dealt with the study of planetary phenomenon. The study rest on independent Indian observations and refute any supposed Greek influence.¹²⁸

a. Characteristics of a Siddhānta

Siddhāntas deal with topics related to physical Astronomy, with the calculations related to the mean and true longitudes of Planets and the difference between them at a certain point of time.¹²⁹ Bhaskarācārya¹³⁰ characterizes a Siddhānta specifying that Siddhānta must deal with enumerations of the units of time from truṭi

to the end of the *pralaya*. Thereby Siddhānta and Tantra deal with planetary calculations, cosmogony and calculations of units of time.

Siddhāntas work on planetary calculations beginning from a Kalpa, the Tantra texts calculate from a Mahāyuga and Karaṇa¹³¹ texts on the mean motions of planets in a given epoch close to the date of their composition.

b. Schools of Siddhāntas

The Siddhānta works differed amongst themselves in calculation related to the length of the year and the calculation related to the motion of planets in a Kalpa or a Mahāyuga. This difference gave rise to three main schools of Astronomy, the Saurya, the Ārya and the Brahma.¹³²

The features which differentiated one school (Pakṣa) from another were the choice of subdivisions of the Kalpa and the number of rotations of each of the planets within the Kalpa or the Mahāyuga.

c. The Peculiarities of the Siddhāntas

The Paitāmaha Siddhānta¹³³ is later and closer to Vedāṅga Jyotiṣa¹³⁴ where as the Vasiṣṭha Siddhānta in PS (Pañcasiddhāntikā) mentions the concept of *lagna* somewhat similar to the present one¹³⁵ Sūrya Siddhānta in the PS is the most clear of the five (4th Āryā) and Romaka which is the latest of the PS matches in year length with Hipparchus¹³⁶ and does not mention the pattern of Yuga.¹³⁷

Āryabhaṭīya or Āryasiddhānta is the oldest of the Pauruṣa Siddhāntas and the most independent one. It includes both Astronomy as well as Mathematics. Āryasiddhānta refers to the diurnal rotation as a rotation of the Earth (in the first part named Daśagītīkā. 3 and also in Golapāda 9 and 10). The concept of motion to the Earth was an innovation in comparison to the traditional ideas of Earth believed to be a fixed sphere placed at the centre of the universe around which the whole world including the heavenly bodies revolved.

Siddhāntas deal with calculations of Ahargaṇa (the number of days lapsed since epoch), it also includes the calculations of the number of years, the intercalary months and also the tithis (omitted) in a Yuga. The Romaka¹³⁸ specifies the method of

calculating an Ahargaṇa. Pauliṣa almost matches with Romaka in Ahargaṇa (Pañcasiddhāntikā I. 10)

The motion of the planets was determined in relation with the Nakṣatras which move faster than the planets. Thereby the planets appear to move from west to East. Jyotiḥśāstra deals with this Eastward motion of planets which is in a relative scale with reference to the Nakṣatras. The Sūrya Siddhānta¹³⁹ comments on this relatively lacking behind and thus eastward daily motion of planets.

The Siddhāntas also talk about the cause of the motion of planets and Nakṣatras due to a wind named *Pravaha*¹⁴⁰

The Siddhāntas also work on the pole star Dhruva and its distance from various places on earth.

In the initial stage of the Siddhāntas, Gaṇita appears in an intermingled form with Astrology¹⁴¹ which later bifurcated on an advancement in the Gaṇita branch and Astrology came to be a topic dealt with the other two branches.

II) Saṁhitā

Saṁhitā is the term coined to the compilation of all the three branches of Jyotiḥśāstra.¹⁴² The third branch other than Gaṇita and Jātaka is also named as Saṁhitā or Śākhā. Saṁhitā is the elder branch of the three. The branching already existed at the time of Garga who is placed later than the Vedāṅga period at the end of which Gaṇita and Hora were emerging as independent branches from the principle bulk of Saṁhitā.

Saṁhitā as a branch is primarily a record of movements or actions in nature and their effects on man and cosmos.¹⁴³ Saṁhitā is divided in two sections A) Śakuna or Divinations and B) Muhūrta or science of proper times for acts.

A) Śakuna

Śakuna very initially were signs or spontaneous expressions of nature interpreted to understand future. Later a systematic study evolved creating a separate section which dealt with the interpretation of the actions of cosmic beings and the underlying phenomenon to view human as well as cosmic future. The texts displaying

this study of divinations are termed as Samhitās, most of which depend on the Garga Samhitā.¹⁴⁴

Śakuna is technically defined as ‘a means of arriving at a definite knowledge about auspicious or inauspicious consequences.’¹⁴⁵

The term already appears in the early Ṛgveda¹⁴⁶ in connection with the appearance of a bird¹⁴⁷ and gradually in the literature with prognostications related to all sorts of birds and animals,¹⁴⁸ *Aṅgavidyā*¹⁴⁹ (body signs or throbbing of body parts), dreams¹⁵⁰, in connection with sacrifices,¹⁵¹ natural phenomenon,¹⁵² *Yātra* (journey)¹⁵³ and many more topics. The extent and importance of the Śakuna branch in the literature can be estimated by a declaration in a Jaina text on omens named *Aṅgavijjā* which categorises ‘every perceptible object in the world as an ominous entity’.¹⁵⁴

1. Synonyms for Śakuna

Śakuna in the sense of prognostications has other synonyms such as a) ‘Adbhuta’, b) ‘Utpāta’ or c) ‘Nimitta’ in the literature.

a) Adbhuta

Adbhuta mean ‘wonderful’ or ‘supernatural’.¹⁵⁵ The word occur in the Ṛgveda in connection with the deities (RV I. 25.11, RV X 105.7) Vṛddhagarga defines adbhuta as that ‘which has not happened before’ or ‘a complete turnover of that which has happened before’.¹⁵⁶ Up to the period of Nirukta I. 5 the term Adbhuta include the sense of future. The Adbhutaśānti of Atharvavedapariśiṣṭa connects the term with the seven deities¹⁵⁷ and the phenomena with the three regions.

b) Utpāta

Utpāta is a ‘portent’ or ‘portentous’ or ‘unusual phenomenon’. It has the sense of ‘flying up’, ‘springing up’ or ‘rebounding’.¹⁵⁸ The word is often used in the Purāṇas and Epics (Vanaparva 155.2-6). Utpāta was generally considered as an unlucky omen in the literature and indicative of a calamity. The Bṛhat Samhitā¹⁵⁹ puts forward the abrupt nature of Utpāta while defining it as ‘that which is opposite or contrary to the natural order’. Umtata are classified as of three kinds, Diva (celestial), Āntarikṣa (atmospheric) and Bhauma (Terrestrial).¹⁶⁰ Divya are connected to the Nakṣatra, eclipse and planets, Āntarikṣa to the fall of meteors, rainfall, whereas

Bhauma to earthquakes and water reservoirs. Counteractions to the Utpāta are provided in Bṛhat Saṃhitā 45.7.

c) **Nimitta**

Nimitta is a ‘mark’ or a ‘sign’. It indicates an auspicious as well as an inauspicious happening and is used in the literature in a restricted meaning as throbbing of body parts¹⁶¹ (Matsya Puraṇa chap. 241) and also in a wider sense (Gitā I. 31). Aṅgavijjā mentions various kinds of Nimitta as Aṅga, Svapna, Lakṣaṇa, Bhauma, Antarikṣa.

Nimitta carries an other sense in the literature. Nimitta means a ‘cause’ or a ‘reason’, cause in the sense of an ‘instrumental’ or an ‘efficient’ cause.¹⁶² In this sense, the term leaves behind the simple sense of being an omen, a mark or a sign of interpreting future. Instead along with being a means to perceive future the term also carries an additional sense of being a ‘motive’ to serve ‘some definite purpose’. It becomes a voluntarily searched instrumental cause either to look into the future or to perform a (prescribed) act or both.

Voluntary means (of divinations) were employed by many ancient cultures to look into the future.¹⁶³ In the Gobhila Gṛhyasūtra IV. 8.15, through the means of brightness and smoke of fire, wealth and luck is estimated. Ramala (Geomancy) introduced from Persian sources and Praśna (Interrogations) answered from an horoscope are the later development of voluntary divinations. Prior to these, the Nakṣatras occupied by the moon were studied to determine the prognostications related to the earthquakes (Śārdulakarnāvadana). Nakṣatras were associated with good and bad portents, thereby kindling of sacrificial fire was prescribed only on certain Nakṣatras.

Kāla as a Nimitta

The above instances especially, divinations related to the heavenly bodies on account of their regularity were connected to specific time limits as well. Such literature related to Jyotiḥśāstra connecting divination to specific times exist in the culture. A class of Saṃhitās which can be placed as intermediate texts combining the

Omens and Muhūrtas were composed.¹⁶⁴ These texts gave an added meaning to Muhūrtas as voluntarily searched auspicious divinations.

Already in the Āraṇyakas definite time is introduced for evil portents to bring off their results.¹⁶⁵ Prophecies of an extensive time unit as Yuga also occurs in the Yuga Purāṇa¹⁶⁶. The Samhitā branch though an extensive one worked on the systematic study of time prior to the development of the Gaṇita branch through the study of heavenly bodies in the form of Nakṣatras and connecting the time and the act through cosmic means thereby making Kāla as a Nimitta or a cause to perform actions.

2. The cause of Śakuna

In an effort to find the cause of omens, the culture related Śakunas to the past actions of men. Varāha mentions Śakunas as the fruition of past actions of man which manifest on a journey.¹⁶⁷ Utpātas, a form of Śakuna are the impacts of the wrong doings of men. The dissatisfaction of the gods related to the conduct of the mortals resulted in earthquakes according to the commentary on the Bṛhat Samhitā (chap.31) citing Vṛddhagarga.

B. Muhūrta

The counterpart of Samhitā branch of Jyotiḥśāstra which is exclusively based on time is Muhūrta. The term ‘Muhūrta’ comes in the senses of ‘short time’, ‘particular division of time’ viz. two ghaṭikās, and ‘proper time for performing an auspicious act.’¹⁶⁸ The definition of Muhūrta occurs in a third sense in Muhūrta darśana.¹⁶⁹

Muhūrtas as particular divisions of time were named¹⁷⁰ and later on were allotted deities¹⁷¹ Actions were arranged on them¹⁷² along with combinations of proper Tithi, Nakṣatra and Karaṇa, out of which Muhūrta was primarily important for success.¹⁷³

The concept of Muhūrta already occurs in the early Ṛgveda¹⁷⁴ which combines an auspicious day with an act ensuring prosperity. Gradually with the study of various time units deemed to be auspicious or inauspicious, Muhūrtaśāstra was composed combining the Tithis Months, Nakṣatras and such factors prescribed for the

performance of several actions. Jyotiḥśāstra in its complete sense as Kālavidhānaśāstra displays itself in the Muhūrta section of Saṁhitā branch which works for proper times right from sacrifices, to propitiatory rites, for the performance of various individual actions and in later times for Saṁskāras.

The requisite of Moon in connection with a particular Nakṣatra or a particular Rāśi (zodiacal sign) forms the base of Muhūrtaśāstra which connects moment to the motion of Moon for the performance of most actions.

The Muhūrta Skandha is important in the sense that due to its utility retained the existence and growth of Jyotiḥśāstra in the culture. After c. 700 AD Muhūrta became the third branch of Jyotiḥśāstra apart from Gaṇita and Horā. Śakuna and Muhūrta were equally important at the time of Varāha. Though later from Śrīpati onwards the importance of Śakuna declined and Muhūrta (1035 AD) became prominent.¹⁷⁵

The Saṁhitā branch chiefly dwelt with the study of characteristics of cosmos and the study of time through Śakuna and Muhūrta Skandha and unfortunately very few or almost negligible new inventions were introduced in the Saṁhitā branch of Jyotiḥśāstra later to Varāha.¹⁷⁶

III) Horā

Horā branch of Jyotiḥśāstra developed later to the Vedānga period and with the additions of Greek elements. Horā chiefly works to forecast the life of an individual¹⁷⁷ Horā can be termed as a technique of voluntary divination by means of astronomical calculation of the birth point. In this sense horā is a combination of Saṁhitā and Gaṇita.

Meaning of term Horā

Horā means 'lagna'¹⁷⁸ or 'half a raśi' (Bṛhajjātaka I. 9.) in its technical meaning. In simple terms horā is an 'hour', 'mark' or 'line'.¹⁷⁹

Horā branch has a claim of a foreign origin. 'Horos' is a Greek term meaning boundary. It was received by the Greeks from Babylonian sources.¹⁸⁰ It flourished in Hellenistic Egypt in 2nd c. B.C. and with Greek elements was introduced to India in 2nd. C.A.D.¹⁸¹

Indian Development

Horā gelled with the Jātaka branch which earlier existed in the culture and which predicted the life of an individual with the aid of Nakṣatras. Sārāvali (II.4) mentions Horā ‘as a technical term for Jātaka.’¹⁸² Horā also has other two sub-sections, Yātra (prognostications on starting a journey or a king’s invasion) and Vivāha (match making from horoscopy for the bride and the groom).¹⁸³ Garga acknowledges the influence of Yavanas on this branch.¹⁸⁴

The seed of Jātaka branch existed at the end of the Vedāṅga period. Jātaka texts find mention atleast 800 years prior to Varāha.¹⁸⁵

Earlier the Atharvaveda VI. 110.2-3 gives impending happenings of the life of a native by aid of the Nakṣatra of birth. The Jātaka system existing in the Atharvaṇa Jyotiṣa which furnishes a pattern of the Nakṣatras unlike the present form of Horoscopy is not only predictive but came with a practical purpose in which actions were arranged on the nine sets of Nakṣatras three each in a set.

The later horoscopy relates the houses in a horoscope with the body parts of Kālapuruṣa identified with the twelve rāśis (Bṛhajjātaka. I.4). Aṅga in Aṅgaviniccaya (Bṛ. Saṁ I. 9) is body and denotes the sign just rising. The other term for the houses is *Bhāva* and *Bhāva* denotes ‘birth and growth’¹⁸⁶ or ‘being and becoming’.

The term Horā according to the Indian counterpart is derived from the term ‘*Ahorātra*’ by dropping of ‘अ’ and ‘त्र’, the first and the last syllable of the term.¹⁸⁷ Elsewhere the term *Ahorātra* is employed to the thirty Muhūrtas of the day and night together and the meanings of the term Horā does not agree in the sense of an hour¹⁸⁸

The Jātaka system in addition also include certain rectificatory measures along with predictions of life from the Nakṣatra at birth.¹⁸⁹

A Synonym for Daiva

The most distinguishing feature of the Horā branch of Jyotiḥśāstra in comparison to its western counterpart is that it is ‘a synonym for consideration of Daiva’.¹⁹⁰ Horoscopy in its present form connected to the reading of Daiva or past actions has an exclusively Indian geneology.¹⁹¹

The Bṛhajjātaka¹⁹² mentions that Horāśāstra manifests the fruits of actions done in previous lives. These past actions were perhaps believed to create certain characteristics in human which could supposedly be known by the Moon placed in the Nakṣatra at birth. Moon later was also connected through the Bhāva and Rāśi system of Horā branch to the Rāśi at birth and the Daśā system by Pṛthuyasha supposedly reveal the period of fruition of past actions in the present life of the individuals.

Also the Human body displays certain characteristics which are in accordance with the lagna and the planetary placements in the sky which can thus be an aid to predict about future.¹⁹³

Other means of Jātaka

Jātaka branch includes other means than a horoscope¹⁹⁴ to look into the future. The Nāḍīgrantha and Ramala are a few of them. other means of Jātaka branch.

v. The Extended Areas of Jyotiḥśāstra

The classification reveals the extensive compass of Jyotiḥśāstra in the literature and the Jātaka and the Saṁhitā branch exerted a vast influence especially on the Dharmaśāstra.

Though the traditional classification limits itself to three branches of Jyotiḥśāstra, many branches of Jyotiḥśāstra might have independently existed and perhaps were in operation at some point of time in the culture which either gelled with the present classification or lost their connecting links with Jyotiḥśāstra and flourished separately.

Prominent of these is Nakṣatravidyā which existed as a separate branch of study mentioned in the Chāndogya Upaniṣad (VII. 1.2, 7.1.). Manusmṛti VI. 50., along with Nakṣatravidyā enumerates Aṅgavidyā, Utpāta, and Nimitta as well which presently form a part of the Saṁhitā branch.

Amongst the ones which chipped of their links with Jyotiḥśāstra are the Śulbasūtras which provided rules related to geometry for the construction of the fire altars.¹⁹⁵ Even Mathematics which intermingled with Astronomy and Astrology severed connections with Jyotiḥśāstra and presently exists as an independent subject.¹⁹⁶ One more is Vedāntaśāstra, a combination of which with Jyotiḥśāstra

occurs in a remnant form in few passages of the Brāhmaṇas.¹⁹⁷ Perhaps independent treatises related to these existed in the culture in the earlier times.

Persons specialized in various areas of Jyotiḥśāstra existed in the culture. Reference to Gaṇaka and Nakṣatradarśa occur very early in the literature.¹⁹⁸ In the Sūtra period, information related to (the precise time of) the *parvan* (New Moon and Full Moon) was to be gathered from those who knew it.¹⁹⁹ The Gautama Dharmasūtra XI. 15-16, refers to दैवोत्पातचिन्तक whose advice was to be followed for the welfare of the king and the country. Even Arthaśāstra (I.9.) advises a king to appoint a priest who has studied Daiva, Nimitta along with the Vedas, the Vedāṅgas and other subjects.

The above instances show that Jyotiḥśāstra held a respectable position and was quiet established in the routine life of the culture though it perhaps carried some restricted quarters. An excessive reliance on the portents of stars was prohibited and Kauṭilya considered the desire to search any auspicious Tithi and Nakṣatra as an obstacle.²⁰⁰ Also earning of livelihood by practicing of Nakṣatravidyā, Utpāta, Aṅgavidyā and such branches of Jyotiḥśāstra is repeatedly condemned in the literature especially in the Dharmaśāstra texts²⁰¹ which excessively rely on the Saṃhitā and the Jātaka branch. Yet the above branches show inclusion in the later systematized classification of Jyotiḥśāstra and there by were considerable from other angles perhaps serving some higher purpose.

Also maintaining oneself by the practice of Astrology though blamed yet the mere study of Nakṣatravidyā, Daiva, Utpātas was allowed by the culture. Such reference show that Jyotiḥśāstra was highly valued and perhaps also involved some unexposed quarters and goals which do not surface or stand out in the present facade of Jyotiḥśāstra.

vi. Prime Purposes of Cultivation of Jyotiḥśāstra

I Curiosity about future

Vedic civilization as most other ancient cultures used Śakuna as a means to know about human and cosmic future as also the later development of Jātaka branch to view the future of an individual. The curiosity about future can be said to be the primary motive of the overall development of Jyotiḥśāstra of past and present.

II Performance of Sacrifices

The chief purpose of cultivation of Jyotiḥśāstra at least in the Vedic times is calculation of proper times for sacrifices which were arranged on the orderly succession of times and were a means to attain long life, heaven and such desired and prescribed forms of future.

III Muhūrtas

The requirement of Muhūrtas or auspicious times for the performance of actions was a basic necessity in the culture and perhaps being the prime purpose of the culture, the sole reason that Jyotiḥśāstra retained its identity in the various developmental phases of the culture. The initial purpose of Muhūrtas for fixing the proper times for sacrifices by recording the positions of the Sun and the Moon with reference to Ayanas and Nakṣatras later shifted to fix the time fit for the performance of Saṁskāra. Muhūrta were also sought for the performance of rectificatory rites. Also Muhūrtas for the performance of daily activities were framed by texts like Ātharvaṇa Jyotiṣa (2.1-11, 3.1-6.).

IV Astronomy as an independent development

The study of Astronomy proper, initially which was secondary to the sacrifices is a later development in the Siddhānta period. It developed to study the positions of Planets and their motions independently revealing the later development of Gaṇita branch as chiefly for pure astronomical matters.

V Horoscopy

The casting of Horoscopes and their reading thereby to infer future became a common practice after the advent of the Greeks and is prevalent till date. Also the angle of Daiva attached to it called for rectifications related to the afflicted Nakṣatras of birth and such matters retained the easy survival of Muhūrtas

VI Pañcāṅgas for Dharmaśāstra purpose

Pañcāṅgas and such ready reckoners prepared from Mīśrakas and other sources can also be attributed the sustenance of Jyotiḥśāstra which chiefly serve the purpose of Dharmaśāstra.

vii. The Place of Jyotiṣa in the Literature.

In the initial stage Jyotiṣa appears in a scattered form in the literature. Later in the Sūtra period Jyotiṣa occurs as a separate branch of study along with few others.

Jyotiṣa as a vedāṅga

Jyotiṣa in the literature attained the position of a limb of the Veda. It comes as one of the Vedāṅgas, the treatises which deal with the subsidiary studies of the Veda.

Amongst the six Vedāṅgas,²⁰² Jyotiṣa and Kalpa constitute the studies essential for proper sacrificial employment of the Vedas. Jyotiṣa thus comes from the very beginning with a purely practical purpose of conveying the knowledge of the heavenly bodies essential for fixing of proper times for sacrifices. The earliest text on Jyotiṣa, the Vedāṅga Jyotiṣa does not profess to be a treatise on Astronomy instead it supplies the information of Astronomy essential to fulfill the practical aim of the culture of the Veda. To study the practical aim of the Veda fulfilled by the Jyotiṣa as a Vedāṅga, the Brāhmaṇas and the Sūtras were to be looked into.²⁰³

The quality: As a Cakṣu of the Veda

Amongst the limbs Jyotiṣa is termed as the *cakṣu* (eye) of the Veda.²⁰⁴ *Cakṣu* is evidently connected with the quality of Perception and Perception in relation with Jyotiṣa in the literature in its very fundamental form is the Perception or vision of the future of man.

The ideology related to future in Veda has a comprehensive compass and extends from simple ideas related to next life and heaven up to a definite explanation of the ultimate form of future prescribed by the culture. Thereby future in Veda appears in two forms, one as a part of time and the other beyond time. Jyotiṣa is labeled as *Kālavidhānśāstra* and though the Muṇḍakopaniṣad (I. 1.4-5) labels Jyotiṣa as one of the *aparā vidyās* (science connected to inferior exoteric knowledge.), yet with this concept of the ‘time’ and the ‘timeless form’, Jyotiṣa known as an *aparā* science perhaps also subserves as a bridge to the *parā* world connected with the superior exoteric knowledge. With such an interpretation Jyotiṣa labeled as a Cakṣu of the Veda along with the vision of future provided on the physical perceptive basis of the units of time formed by the days, nights and years also connects itself to

perception in the sense of insight about the ultimate form of human termed as 'Release'.

The post-Vedic development of Jyotiṣa as a *caḅṣu* provided by the culture for a vision of the past actions is chiefly through the Jātaka branch. Such a backward glance into the past of human from a certain point of time can be said to be a purposeful one on part of the Jīva heading towards an ultimate goal prescribed by the Veda to get an idea about the past actions amongst the cycle of rebirths and their inevitable outcome.

The concept of rebirths of man reflects in a broader sense in the idea of creation and recreation of the universe adding an extensive angle to Jyotiṣa as a *Caḅṣu* building up the theories of Kalpa, Yuga and Manvantaras.

3. The practical utility : As a Vedāṅga

The practical utility of Jyotiṣa in the culture of the Veda is inevitable and reflects from the very beginning. Providing times for the performance of ritual works for a certain future render Gaṇita as a secondary development. Jyotiṣa shows a primordial emergence from the Astrological quarter,²⁰⁵ calculations thereby seem to be a requirement of astrology. The idea of proper times for sacrifices itself comes from a conceptualized quarter related to the ideas about future and efforts to attain such an accuracy as to acquire such a future was the basic intention behind the calculation of times. This appears to be the base of Jyotiṣagaṇita in the initial stages in contrast to the later development of the Siddhāntas which worked for Astronomy proper.

The practical utility of Jyotiṣa in the Veda displayed in the system of the Nakṣatras and their order clearly deemed to be ritualistic or astrological and not astronomical.²⁰⁶ Though Colebrooke hints to a common quarter of origin of the prior developed Astrology and the later Astronomy erupted there from.²⁰⁷

Thereby Jyotiṣa in its practical utility is instrumental to the body of the Veda and as a functional unit of the working body of the Veda provide a vision of human as well as cosmic future equally providing proper times for performance of actions for the formulation of a specific future.

3. Concept of Karman

Karman designates action and carries a comprehensive character in the literature.

i. Derivation of the term

The term Karman (n) is derived from the √ kṛ which means to do, make, perform, accomplish, cause, effect, prepare.²⁰⁸ In compounds it becomes Karma.

ii. Meaning of the term

Karman or Karma chiefly means action (kriyā), work (kārya), deed (kṛtya).²⁰⁹ In its phase wise development in the literature, it comes in the sense of a religious rite, duty, moral duty, fate and such meanings all in accordance with the changeable connotations of action.

iii. Origin in the Literature

The term occurs in the Ṛgveda in the sense of ‘doing’.²¹⁰ It also appears as a ‘good deed’ (*sukṛta*).²¹¹

iv. Developmental Nature

In the Ṛgveda, the word Karman is often an expression of the ‘brave deeds’ of deities.²¹² It also comes as ‘religious works’ in the form of ‘sacrifices’ or ‘offering of gifts’.²¹³ In the Saṃhitās, Karman generally meant action and also carried a specific meaning of ‘action according to Vedic injunction’. Performance of meritorious sacrificial work²¹⁴ was the nature of Karma in this period.

The Vedic sacrifice itself was termed as Karma in the Brāhmaṇas which lay a pre-eminence on *yajñakarma*.²¹⁵ The acts or religious rites in this period were generally performed in hope of future recompenses such as long life, wealth, heroic sons, heaven and immortality and the term Karma came with an underlying sense as an unseen merit fructifying in future for acts or prescribed acts performed in present.

These actions explicitly differed from the later development of Karman in the Upaniṣadic thought where karma while retaining its prior meaning as ritual actions, also meant knowledge (Vidyā) regarding speculations of the soul. Karman as religious rites and as knowledge (Vidyā) appears to be distinguished already in the Śatapatha Brāhmaṇa X. 4.3.4-10. Later the Bṛhadāraṇyaka Upaniṣad while praising

Vidyā as Karman specify the differentiation between these actions in terms of their fruits.²¹⁶

Karman as Vidyā resulted in extension of the concept to the mental and moral sphere. The fire offering sacrifices were declared to be producing ephemeral and thereby perishable results.²¹⁷ The expression of action changed from mechanically potential fruit bearing ritual acts to ethically retributive ones which were explanatory to the sufferings and inequality in the world. Ethical nature of Karman also oriented the sense of Karman chiefly to human deeds. The nature of the moral act performed came to be considered as a decisive factor for the future becoming of man.²¹⁸ Also Karma as a binding force extended its sphere to the successive existences of man operating as fate.

The belief in continuation of existence after bodily death in different forms and planes prevailed in the culture. The idea of being born once again after death is expressed in Śat Brā. XI. 2.1.1. Meritorious actions were performed for deliverance from Punarmṛtyu (Śat. Brā. II. 3.3.7) or conquering of Punarmṛtyu (Śat. Brā. X. 1.4.14). The soul was supposed to follow the *iṣṭāpūrta* after death of the body.²¹⁹

With rebirth (Punarjanma) fixed as a consequence of actions, the concept of Punarmṛtyu of the Brāhmaṇas disappeared in the background. The utility of the elementary *iṣṭāpūrta* was denounced by the Upaniṣads as well.²²⁰

Vidyā (karma as ritual knowledge) came to be condemned in the later stages as leading to darkness²²¹ considering Karma in this sense as a bond release from which was sought for. The attainment of Brahman or Brahman world which was beyond good and evil actions became the final goal to be reached by man.²²² The basic meaning of Karma as action subsided at this point and Karma acquired an obscure sense of non-action.

Post-Vedic the doctrine of Karma developed in a composite form. The Vedāṅgas advocated prescribed actions. The ritualistic nature of Karma as *yajña Karma* conducive to happiness by performance of the principle sacrifices was retained in the systems. Karma and Saṃsāra were the general consideration of Dharmaśāstra (Manusmṛti 12.1-82) and also the ultimate retribution for actions (Manusmṛti 12.1).

Whereas the Epics followed the Philosophy of the Upaniṣadic preaching's of the becoming of human according to his deeds (Br. Up. 4.4.5) and ponder on *Daiva* and human effort, the Purāṇa literature retain the Vedic attitude of performance of Śrāddha and such rituals to achieve rebirth.

The concept of transfer of merit or demerit²²³ appears to be deeply rooted in the tradition. Karma is transactional amongst individuals²²⁴ and also among the individual and his generations²²⁵ though this is the general acceptance in the non-philosophical context and systems like Yoga and Advaita Vedānta deny any transfer of Karma amongst persons and express it as an individual process.

Moral Karma as primarily mental in its nature and that the intention behind the act than the actual act resulted in puṇya (merit) and pāpa (demerit) was propounded by Aṅguttaranikāya Text iii, LX111.11. Whereas the material nature of Karma with the property of downward gravity (adhogurutva)²²⁶ or Karma as a product of Prakṛti or primordial matter and not Puruṣa was also discovered.

Karma came to be considered as the cause of all activity amongst the living beings,²²⁷ named as Pradhāna, the originator and source of the material world.²²⁸

v. Sources of Karma

In the creation hymns of the RV, the sources from which the cosmic activity originated are said to be various such as Viśwakarman (RV. X. 81.82), Puruṣa (RV. X.90) and also the nameless, Tad-ekam (RV.X.129). Amongst the individual gods, Savitṛ defined as the stimulator of everything²²⁹ is described as the great stimulator of life and motion in the world.²³⁰ Uṣas is said to have arisen all living beings to motion.²³¹ Pūṣan is the helper god serving as marking the doings of the whole world (RV. II. 40.5) whereas Varuṇa is supposed to be the controller of the laws of nature, he and Mitra uphold the physical and moral order in nature, both rule over the whole world (RV.V.63.7). The Atharvaveda²³² projects Kāla as the source of creation of the world. The Śvetāśvatara Upaniṣad (VI.11) states that Karma is ordained by god. Cosmic action as a projection from the absolute Brahman from which all bhūtas spring, sustain, return to and are absorbed therein is expressed in Taiṭṭirīya Upaniṣad.²³³

Along with the advent to human orientation of the Karma theory mental activity came to be regarded as the root of Karma.²³⁴ In this context Karma is said to be born of will or intention,²³⁵ desire and action rested on ignorance (*avidyā*), which became the source of all activity. Priorly Karma evolved from ritualistic actions (*yajñakarma*), whereas in and later to the Upaniṣads, it claimed an ethical origin.

External actions or *bāhyakarma* came to be defined on account of speech and body whereas time on the basis of maturation of stored Karmas, came to be considered as a source of karma.²³⁶ Karma is also said to be a product of *Prakṛti*.²³⁷

God (*Īśvara*) is postulated as the efficient cause (*nimittakāraṇa*) who incites the *dharma* and *adharma* residing in the soul and the elements to activity.²³⁸ Since Karmas are acetana, god is the giver of the fruits of actions (*Vedāntasūtra* 3.2.38). He brings about the fruition of past actions (of men) and their distribution according to *vidhi* (law) is distinctly expressed.²³⁹

vi. Effects of Karma

1) Karmavipāka (maturation of karma)

Karma once performed bear fruit.²⁴⁰ This fruition or maturing of karma is termed as ‘Karmavipāka’ which deals with the operative part of the doctrine of Karma. Karmavipāka explained the consequences of Karma as to how and when they fructify.

Vipāka²⁴¹ in case of man is in the form of experiencing the results of his actions after their maturation. The *Sañcita* Karmas or accumulated Karmas in due course fructify according to their nature resulting in ‘pleasure’ or ‘pain’ which is experienced by the self. Karma was believed to provide the stimulus for the causation of happiness as well as unhappiness which were its virtues²⁴²

Karma is termed as instrumental to the relationship between *puruṣa* and *Prakṛti*.²⁴³ The nature of *adrṣṭa* a complex of the previous deeds became a decisive factor in the future discourse of the individual. Broadly the determination of *jāti* (birth), *āyuh* (the length of life) and *bhoga* (pleasure and pain) depended on Karma (in the sense of fruition of past deeds.).²⁴⁴ Thereby present life is considered as a fruit of

the Karmas of the past life. (Rāmāyaṇa 2.47.19). Life span is a result of Karmavipāka and thereby a sum total of the actions of past lives.

2) Rebirth and transmigration

Rebirth and transmigration became the necessary corollaries to the theory of Karma as an explanation of the effects of Karma.

Rebirth is postulated as the foremost consequence of Karma as a binding force. Action produced (good or bad) results and thereby rebirth occurs “by way of a necessary supplement to the result of actions” or “in order to bring the result of actions to completion”.²⁴⁵ Yājñavalkya (3.206-209) makes a mention of the rebirths of ‘mortal sinners’. Caraka believes rebirth as a function of Karma, mentioning unrighteous actions of past life leading to diseases. (Caraka Samhitā IV.2.44).²⁴⁶ Thereby physical deformity and mental sufferings are the products of past-karmas and the shape (body-form) and mind of an individual accord with his past actions.²⁴⁷ Rather the body originates of Karmas as causal to experience them,²⁴⁸ and that the past-karma of the soul determine the connection of soul with a body at a time as also create a body fit to experience the consequences of the past-karmas²⁴⁹ an the fundamentals to effectuate past Karmas.

The consequences of sacrificial and other prescribed actions performed in present life also subject to rebirth to receive their fruits.²⁵⁰ A man who has duly followed his duties (Dharma), after death and on his ‘return’ experiences the consequence of his actions.²⁵¹ Thus the quality of actions determine the quality of rebirth thereby rebirth occurs in various worlds according to the nature of actions²⁵² and the subtle body (Līṅgaśarīra) as a vehicle transmigrates after the death of the body as a link to a new one for the workings of the unexhausted Karmas is also a subordinated postulate of the theory.

vii. Classification of Karma

Karma is broadly classified in the literature as Daiva and Puruṣakāra. Daiva²⁵³ is defined as one’s own Karma, accumulated in the past lives in the cycle of transmigration and rebirths. Life and death sufferings. pleasure and pain result from accumulated past actions and are thereby said to be attributes of daiva.²⁵⁴ In this sense

Daiva carries a 'passive' aspect. The efficacy of Karma from this pessimistic view point as against its effectiveness in case of present human actions is skeptically mentioned as *deva-guhyāni*²⁵⁵ (the mysteries of the gods.)

Puruṣakāra (self effort) as action in the sense of actively pursued present human actions is also termed as Karma²⁵⁶ in its very simple sense. The superiority amongst Daiva and Puruṣakāra is enquired (Mbh.13.6.1). They are equated with each other (Matsyapurāṇa 30.12) and also contrasted as regards rebirth²⁵⁷ which depends on niyati or daiva and is beyond reach of one's deeds. Yet Puruṣakāra in terms of importance of present actions and their results is rendered superior.²⁵⁸ The Epics accord 'the shaping of Daiva through human actions' as Puruṣakāra²⁵⁹ and with relation to Āyurveda, Puruṣakāra carried the meaning of therapeutic measures to be followed to cure diseases which are results of past actions. Ātreya mentions life span dependent on both Daiva and Puruṣakāra²⁶⁰ whereas the accomplishment of a deed is said to be dependent on both Daiva and Puruṣārtha (effort) by Mārkaṇḍeyapurāṇa XXIII.26 which is reiterated by Agnipurāṇa.²⁶¹

The fruition of action is also dependent on time along with Daiva and Puruṣakāra.²⁶² To this extent the time related classification of Karma on the basis of their maturation as 'niyatavipāka' and 'aniyatavipāka' occurs,²⁶³ as well the Karma which begins with one's birth and determines one's present existence the 'Prārabdha' (Ārabdha)²⁶⁴ Karma, is also a classification of Karma operating for a single lifetime.

Karmas are also classified according to the qualities,²⁶⁵ on the basis of body mechanism²⁶⁶ and also on the basis of their consequences.

viii. Karma as a Remedy

The inclination towards neutralizing the effects of Karma especially in its negative sense thought to be the cause of sufferings or ill-effects is an early tendency of the Veda. Prayers to deities to this effect occur in the early part of the Veda as also the oblations offered through the medium of sacrifices. Sacrifices were also performed to obtain heaven for enjoying their rewards. Very initially accumulation of merit through ritual actions and creating Kārmic potential to be utilized in near or distant future was the form of prescribed Karma.

Sharing of Karma as transfer of merit in the form of offerings to pitṛs²⁶⁷ who were believed to set free or save their descendants from evil things was a common cultural practice. Śrāddha rites were performed for the welfare of the departed souls.²⁶⁸ Earlier prayers are addressed to deities to cast away from the transgression of the fathers²⁶⁹ the RV mentions about aversions to share the evils of others.²⁷⁰ Whereas Jainism did not favour the transfer of merit, Buddhism on the other hand believed on a class of *preta* living on the gifts of others (*paradattaupajīvi*-Milindapañha IV. 8.29). the philosophical systems did not accept the concept of transfer of merit.²⁷¹

Increase in merit by measures such as Dāna (charity or gift),²⁷² Japa²⁷³ (recitation of Vedic mantras and names of gods) Vratas²⁷⁴ (religious observances) in the form of obligatory, expiatory, purificatory acts; Tīrthayātra,²⁷⁵ (visiting places of Pilgrimage) and such actions were brought about. This came about initially for securing merit and later with the development of Karma theory also for removal of accumulated demerit.

With the concept of ethical retribution of Karma, moral actions as good (puṇya) and evil (pāpa) and their results thereon came to be studied.²⁷⁶ With the notion that the chain of existence continue its operation until Karma expires., Karma became as a bondage and freedom from the bondage to escape from the workings of Karma was sought for. The measures employed were in the form of Saṁvara,²⁷⁷ desirelessness,²⁷⁸ Niṣkāma Karma²⁷⁹ (detached actions) and such others.

ix. Essential Constituents of the Theory of Karma

The gist of the theory of Karma in the literature can be explained as under

1) As a law of causation

Karma is a causal law, the law of action and reaction applicable to all sorts of cosmic actions. In case of human, it extends along with the physical actions to the mental and moral sphere as well.

2) Moral orientation

With the responsibility of one's own actions being retributive, Karma theory apart from physical actions enhanced the moral actions. Good actions resulted in

happiness and inversely evil one's produced sufferings Human effort (Puruṣārtha) and free will became the important ingredients of Karma.

3) Operation of Karma through rebirth and transmigration

Karma being causal and subjected to retribution, rebirth and thereby transmigration in various forms of existence came as an inevitable effect for the past actions. Karma became explanatory for the present fate of an individual.

4) Deliverance from Karma

Puruṣārtha in the form of performance of prescribed action to reduce the effect of daiva (past actions) and final liberation from the operations of karma also appear as endpoints of the theory. Karma being an efficient cause and not a primordial one gave a scope for Puruṣakāra. Prescribed actions to such extent as to release from the bondage of Karma existed in the culture. Facing the Prārabdha Karma was also a means of deliverance from Karma.

x. Aspects of Karma

1. Karma is central

Karma is centrally placed to the explanation of the universe by the culture. It is proposed as the cause of the activity in the entire world and thereby a fundamental percept being the cause of everything (Padma Purāṇa 2.94). whereas it actively pursued in the Vedic period in the form of ritual and ethical actions as a chief means for the obtaining of heaven, immortality and the for Brahman world, in the post-Vedic period it provides a causal platform for the working of the world as an effect of past actions.

2. Karma is unseen and fructifies with time.

Karma as an unseen magical virtue or as a merit of ritualistic actions fructifying at some later point of time is repeatedly expressed in the literature. Its manifestation after bodily death is also mentioned (AV.XVIII.2.57). In the later phase the daiva aspect of Karma considering birth as an expiation for the actions of previous lives also retained the unseen angle of Karma. In its literal sense it is termed as 'adṛṣṭa' or 'apūrva'.²⁸⁰ Its connectivity with the parts of time as fruition of past actions

or fructification in a distant future beyond bodily existence, makes 'time' a function of karma.

3. Storage of Karma

Karma possessed a tendency of gathering. Every action once performed was believed to fructify, and those which do not fructify instantly were bound to be stored. Whether meritorious or non-meritorious every action being consequential and resulting in fruition after a certain lapse of time attributed Karman the property of accumulation until they being fructified or exhausted. These were inclusive of accumulated Karmas of all the past existences, whose fruits remain to be experienced. These set of Karmas are termed as 'Sañcita Karma'.

The stored Karma is material or lay in a matter form being compared to a lump of earth or wood and insentient in character.²⁸¹ Sāṃkhya make it a part of the primordial matter (Prakṛti).

The association of the matter form of Karman (*Pudgala* of Jainas) with the soul is believed the basis of the *karmaṇaśarīra* or else the *liṅgaśarīra* (subtle body) which is controlled by Karma residing in it along with avidyā and desire.²⁸² These residues of the acts stored in the form of tendencies (saṃskāras) fructify in many lives is also a presupposition.

A special type of Karma stored in the form of action potential namely apūrva, the subtle potency arising from the sacrificial action is said to reside in the agent and stands as a connecting link between the act and the reward over the lapse of time. In an earlier period the idea of accumulated merit is expressed in the Taittirīya Saṃhitā V. 7.7.2

4. Inequality due to Karma

Inequality amongst human beings is attributed to past-karma as good and evil resulting in variation in caste, form or appearance, in economic status and success and fortune.²⁸³ The variety in the biological species is also accorded to Karmas²⁸⁴ on virtue of their deeds leading to superior forms of life as a consequence of higher merit. Rather the entire differentiation from Brahmā to a blade of grass is made dependant on Karma.²⁸⁵ Thereby diversity is made a result of *Karmavipāka*.

Inequality along with difference in the nature of individual actions also manifests in the time of Vipāka.²⁸⁶ The inequality in the body forms and mental faculties of human are accorded to the rajas and tamas along with the *pūrvakarmas*.²⁸⁷

Deeds also determine the plane of fruition.²⁸⁸ Good conduct results birth as a human being or in heaven whereas evil conduct leads to animal birth or hell. Kauṣītaki Upaniṣad (I.2) mentions rebirth in different planes of existence. The ideas of other worlds viz, devaloka (heaven) and yamaloka (world of fathers) reached by devayāna & pitṛyāna respectively and even the idea of hell expressed in earlier Veda modulated along with the theory of Karma and in the later part with rebirth essentially in this world, swarga (heaven) came to be defined not as a region but as a state (of mind) denoting happiness (Śābarabhāṣya on Mīm. Sū.VI.1.1). Karma at this stage thereby became directly associated with emotional experiences and their bifurcations.

5. Motion of Karma

Karma is equated with motion. The idea subsists itself in its literary expression and in its basic concept that every action is inevitably subjected to fruition. It is also frequently expressed in the notion of transference or exchange of Karma. It is said to possess downward gravity (adhogurutva) in opposition to or relatively with the soul possessing an upward movement. (ūrdhvagurutva).²⁸⁹ This thought in sense of being tied down (due to immoral actions) is expressed very early in the concept of the fetters of Varuṇa, whereas the idea continues in later period where a man with true insight is not restrained by his actions in opposition to those without insight who are tied down to repeated births and deaths. (Manusmṛti 6.74)

Karma (human action) is determinative of a man's gati²⁹⁰ is an important concept in relation with the doctrine. In the initial literature, the soul was supposed to move by its inherent power (स्वधा)²⁹¹ and later because of the accumulated Karmas. Or it was the complex of dharmādharmā (adrṣṭa) which decided the future course of the soul. The possible courses (gati) or destinies²⁹² depended upon the nature of the acts.²⁹³ The state between two material or gross bodies defined as *vigraha-gati*²⁹⁴ also finds mention in the literature.

4. Vedāṅga Jyotiṣa and Karman

In relation with Jyotiṣa, Karma carries a comprehensive meaning. In contrast to its later sense as restricted to the acts of human beings, with the entire form of Jyotiṣa it is related to the overall cosmic activity, the action and reaction in the happenings of the cosmos, inclusive of physical and moral things, the living non-living things and perceptible and imperceptible objects. Elsewhere in the literature this broader sense of Karman occurs in the Vaiśeṣika darśana and also seen in the Bhagavadgītā.²⁹⁵ The correlation comes chiefly in two sorts, firstly it includes the study and interpretation of the natural cosmic activity and secondly it works to provide proper times from the cosmic activity for the performance of voluntary actions of human beings.

i. Cosmic Actions: The Substratum of Jyotiṣa

With Karma as natural cosmic actions, Vedāṅga Jyotiṣa in alliance with Karma deals with the study of the nature and the light objects and the phenomena dealt with it. It included the study of divinations, the voluntary and involuntary natural actions for the interpretation of human future. Also the learning of the regularity of the cosmic process depicted by the animated nature gods and the application of the orderly motion of the luminaries and the heavenly bodies for performance of prescribed human actions. The sattrā (yearly session) was arranged on the course of the Sun. Most of the later rites were based on the position of the Moon in the divisions of the sky, the acts in accordance with the characteristics of the Nakṣatras in which the Moon was situated.

As daiva came to be regarded as good and bad actions of the previous birth/s of human²⁹⁶ Vedāṅga Jyotiṣa provided a substratum for the reading of the past actions. Daiva and its synonyms²⁹⁷ came to be regarded as divine will,²⁹⁸ its course coming from the gods or operated by the agency of the gods with the common expression as the fruits of (one's own) actions coming from the gods.²⁹⁹ Daivabalapravṛtta³⁰⁰ included lightning and natural disorders along with curses, wraths of demons directly related to the gods with human at the receiving end.

The perceptive cosmos served as a base for the ideological implementation of the culture. Worshipping the rising and the setting Sun was said to deliver from the sins (Kauṣītaki Upaniṣad 2.7). It also worked as a live screen for the happenings or myths in the past exhibited in the form of impressions to present vision. Allied with this the stars visible in the sky were the lights of the virtuous men in the past (Tai. Saṁ. 5.4.1.3) due to their chaste deeds were raised to stars. Also were informative the star clusters in examples like the Orion myth which showed the desirous Prajapati and the consequence of his actions. These messages served as way a sort of evidence of the results of good and bad actions and were obviously utilized for the future designing of man.

In connection with Karma through the cosmic activity Vedāṅga Jyotiṣa came to be considered a Cakṣu (eye) for the vision and an insight for shaping of future and also provided a look-out for the past actions. Actively pursued human actions in present retained its importance through out, adverse daiva could be unwind by self effort was believed, yet there was a dependency on cosmic activity as amongst the two destinies (vidhāne) ordained for men one was brought about by the gods and also the fruits of Karma depended upon daiva and the effects of the past, present and future along with human efforts.³⁰¹

ii. Kāla and Karma

Puruṣakāra and daiva though parts of Karma, are contrasted on the basis of Time. Time (Kāla) is also considered an important factor along with action (Karma) for the functioning of the world.³⁰² Often time is equated with the *daiva* counterpart of Karma in the later literature in connection with *Karmavipāka* or fruition of karma. Kāla is accorded the quality of bringing to fruition the past actions. Ādiparvan (1.1. 188-191) elaborates the working of Kāla as to ripen and then decay the beings.³⁰³ This function of Kāla was perhaps subordinate to the early culture yet work on a certain time could lead to a desired future was a thought prevalent in the culture since very early times. Ṛgveda (III. 8.5.) mentions the utility of an auspicious day for planting a sacrificial post and the resultant prosperity. Ritual actions on the *parvan* of Prajāpati, a

personification of Kāla, representing a Samvatsara was a regular practice in the Brāhmaṇa period.

In the later flow of thought, the culture ascribed activity to matter and materialistic forms. All actions were said to be performed by the guṇas (constituents) of the primordial matter (Prakṛti), thereby qualities were connected with matter. Guṇa (quality) and Karma are essentially related to the substance whereas Kāla is amūrta (non-embodied / formless) and is an acting force in bringing forth the activity (whether good or bad) residing in the substance. Thereby, if Karma qualitatively specifies the cosmic activity (of material forms), then Kāla can be termed as the record or account of that particular activity. This quality of Kāla is expressed in the literature as keeping an account of days, nights and its other fractions and causing sufferings.³⁰⁴ Further these divisions of Kāla as day and night and such factors also are said to arise due to activity of the material cosmic objects as the Sun and the Moon resulting in light and darkness. The study of these qualities of cosmic matter, the resulting Kāla and its effects on human and cosmic future continued till the period of Varāha.³⁰⁵

Also since the activity of the cosmic matter becomes the cause of cosmic time, the variations in the cosmic activity can also be said as the cause of the variations in cosmic time. A mutual dependency arises here as time becomes an operation of Karma and Karma depends on time for its fruition. A study of any such unit of time can be a ready reckoner for providing information about the activity of the cosmos stored in it in the form of characteristics or qualities.

A study of the characteristics of the cosmos occurs very early in the Veda in form of the natural phenomenon represented by the deities. The order in the cosmos and one process changing into the next one resulting in a successive changeability of events is recorded with the aid of time and its units. Also a complete change in the characteristics occur at some point of time and the moment which brings forward this change is also discovered in the form of the joints of days and nights, the New Moon and the Full Moons, the Ṛtusandhis, the Uttarāyana and the Dakṣiṇāyana occurring due to the motion of the heavenly objects. The notion of future and the impending

auspicious or inauspicious happening is made dependent on this change and the unit of time which brings out this change in the Veda.

On part of the moment, it being a carrier of the stored cosmic activity inclusive of the characteristic in it and being devoid of any quality of its own since it is non-embodied; this quality of the cosmos becomes an identity of that particular moment. Inversely, the moment which carries it is a witness of that specific activity lying in it and also a witness of the change it may lead to, in the next successive moment, as the activity may proceed. Thereby any such moment becomes a *sign* or a *mark* for that particular activity.

Veda and the later period has utilized the strength of the moment and the further units of time to seek knowledge about the impending future from the variety of cosmic activity which lie in the divisions of time. Long time spans as Kalpa, Yuga, Manvantara and such spans have been studied in the relation with the quality of the cosmos and the moments of the beginning of these time spans have been calculated and studied to understand their effects on man and cosmos and also to calculate the age of the cosmos.

Apart from the variety in the cosmos from which activity arises or is stored in the form of characteristics and is brought forth by time, the culture has discovered certain part of the cosmos as non-active or without activity or motion. The concept is present in the expression of the all pervading Brahman in the Upaniṣads or later in the notion of the non modified part of the primordial matter of the Sāṃkhya philosophy or else in Sun without parts. The idea of time beyond its three parts as past, present and future offers a connectivity to such parts of the cosmos. The negation of time or time as a whole or else the timelessness of the universe follow such regions of cosmos which explicitly refer to a time plane rendered superior than its other counter parts which differentiate on account of variable activity.

iii. Perception by Kāla

One of the chief concern with the correlation of Jyotiṣa and the Karma theory is its connectivity to human future. The nature of the working of cosmic activity and time being gradual and successive, the study related to future from these two becomes

an ordered process and rules out any possibility of suddenness in any event or happening. In an attempt to read future from cosmic activity, the onset of involuntary divinations mentioned as Utpāta or Adbhuta, or the apparent motion of the Sun in the two hemispheres, count to the limitations of the human senses rather than the actual process. This was perhaps acknowledged very early since the Sun never really rises or sets is already mentioned in the Aitareya Brāhmaṇa³⁰⁶. The daily occurrence of day and night too seemingly indicate a restricted point of observation. Apart from these future from long time spans or timelessness of the universe being beyond a single human life span restricted by births and deaths, or rebirths obscuring the memories of past lives the perceptive faculty of Time with cosmos as the standard means has been used to transcend the limitations of human to read the past actions and the future of man.

iv. Actions on specific time

The transmigration of the self is said to be due to acts and bondage to time.³⁰⁷ And destiny is made a factor operating with time which decide the fate of earthly existence of man. Thereby time in relation with past-Karma decide the period of fruition³⁰⁸ of action whereas human endowed with free will possess the independence of action. Cosmos being passive and non-intelligent is rendered non-active in terms of free will.

Cosmic activity with aid of time is utilized as a standard means for performance of prescribed actions and also for reading of the past ones. Fruition of action on appropriate time is made the quality of the cosmos, whereas man is given an injunction to act on prescribed times derived from the cosmic material by the culture thereby making work on appropriate times a necessity for an ideal future.

Thus, the limitation of perception is to human and not to time and cosmos. Whereas the limitation of independent action is to time and cosmos and not to human. Therefore the mutual qualities of cosmic time with its ability of perception and human with his independence to act are brought together by the culture to work on human and cosmic future and which forms the basis of the co-relation of Vedāṅga Jyotiṣa and Karma in the literature.

v. Future of Man and Cosmos

Very early ritual actions and time are intentionally connected through the medium of sacrifices for futures recompenses. The importance of moment to such effect as a unit of cosmic time, its transitory existence on part of the observer is acknowledged. That it carries along with it certain qualities of the cosmos deemed special for human work and while passing away it takes along with it the qualities it brought forth also the fact that being a part of the natural law it cannot be reproduced voluntarily and is beyond human intervention is also acknowledged. This is what can be termed as the 'strength of the moment' which must have been contemplated in the prevalent culture then and thereby specific actions are seen to be arranged on its occurrence.

The importance of right moment, in relation with its qualities and its transitory existence for a sacrificer appears to be studied and utilized in the Vedic times where the man was said to be cut off from the heavenly world if the proper time for Darśapūrṇamāsa rite was not followed. The importance of cosmic time as one which connects man to other planes on performance of proper actions was acknowledge since early period.

The ideology of cosmic paths and regions materialized as a practical device to the study of human and cosmic future. Work aimed at a right direction in cosmos for desired effect in terms of future was arranged and the path of natural light displayed by the heavenly bodies was followed. The order of light brought forth by Kāla was pursued to such an effect. The initial study of cosmic order by means of the deities leading to the sacrificial order and then the moral order in and later to the Upaniṣads divulge the flow of the correlation as beginning with a cosmic orientation and ending with centralization around human. Rather, the transformation of Ṛta, the physical cosmic order into Dharma, the sacrificial and moral order which served as a basis of culture can equally be termed as a basis for the correlation of Jyotiḥśāstra and the concept of Karman. Though serving a physical substratum to the ideology of the culture was the initial role of Jyotiḥśāstra, with the concept such as the deliverance of the soul where Prakṛti becomes a mere illusionary appearance, the role of cosmos

became more and more passive with Jyotiṣa confined as a mechanical time reckoner and the later Karma theory limiting itself to human actions. The Vedāṅga Jyotiṣa, the first of the extant texts on Jyotiṣa, deemed technically as a calendar is a sound proof of the reliance of human activity on the cosmic order for a definite future and also of the cultural line of thought connecting appropriate cosmic time and human action for the achievement of such a future which was believed to be an ideal one by the man of early times.

Jyotiṣa which was very initially connected to the study of light forms, loosely bound to the physical and moral actions of human gradually came to be labeled as Kālavidhānśāstra, the law of times which appropriated specific times for the performance of human actions. There occurs a shuffling between cosmic time and human actions, as a cause as well as an effect in terms of shaping of the human future on account of which Kāla is equaled with a potter (Mbh. 12.34.10). A systematic effort directed towards organizing human future with the aid of Kāla is evident in the culture. The development is gradual and essentially phase wise but not linear on terms of the cultural versatility and occurs in an attempt to decipher repeatedly the cosmic puzzle in relation with man and his future along with the apt usage of time and actions to restore the perhaps attenuated harmony of human and nature.

Concluding Remarks

Conclusively, the study of Jyotiḥśāstra and the concept of Karman pursued by the culture happens to be a study of nature and light forms brought forth by Kāla and its order on part of Jyotiṣa and the systematic study of physical and moral actions of human on part of Karman. Also, etymologically the term dharma originating from √ dhṛ or the term religion from *religere* meaning 'to bind', in connection with the correlation appears as 'a binding of prescribed human actions to the cosmic actions through Kāla' brought about by the culture for the shaping of human future.

End notes

- 1) Dhātupātha 1.2.
- 2) in the sense of nominative.
- 3) Nighaṇṭu 1.16, Nirukta 2.1, Pāṇini 6.3.85.
- 4) Mīm. Sū. 4.4.40.
- 5) The import of term jyotis in Upaniṣadic context, p.102.
- 6) Apte. p.224. Amarkośa. 3.3.230. Amarkośa gives four meanings of ज्योतिस् (n). viz. Nakṣatra, Prakāśa, Dṛṣṭi, Jyotiḥśāstra.
- 7) As light / lustre (RV. 1.48.8, IV.10.2.).
As heavenly light (RV.VIII.48.3.).
As luminary, as Sun (RV.1.124.1,IV.13.1.).
As dawn (RV.1.113.1,AV. IV.14.3.).
As light of Brahman (Br.Up. 4.3.2-7.). As fire (AV. 1.9.2,1.35.3.). As Tejas (Chān. Up. 6.4.1.). As Agni (Tai. Up..2.1.3.). As Jyotiṣ (Muṇḍ.Up. 2.1.3.). As faculty of seeing (RV. I.117.17.).
- 8) Measures the days (RV. I. 50.7.), prolongs life (RV. VIII. 48.7.), life as the count of Sunrise (RV. IV. 25.1, VI. 52.5.).
- 9) As Āditya (Br. Up. VI. 2.15, 16.).
- 10) RV. IX. 113.9.
- 11) √ cand. I P. 'to shine', *mās* (the measurer) RV. VIII. 94.2.
- 12) RV. X. 55.5; Chān. Up. 5.10.1; Śat. Brā. 1.6.4.5.
- 13) Vedic Mythology, p. 113.
- 14) RV. VIII. 2.10, IX. 33.2.
- 15) Moon is commonly addressed as *indu* in post -Vedic literature, Yāj. Smṛ. I.80.
- 16) सूर्यरश्मिश्चंद्रमा गंधर्वः। Tai. Saṁ. 3.4.7.1.
- 17) Aṣṭakā (8th tithi in the fortnight after Full Moon) was considered worthy of offerings.
History of Dharmaśāstra, Vol. V.1. p. 65.
- 18) Yogayātrā IX. 1-3, 10; Nārada Purāṇa I.56.358-359.
- 19) RV. X. 90.13.

- 20) Mai. Sañ. Iv. 2.1, Kauṣ Brā. 1.2, Śat. Brā.ii.4.2.2.
- 21) Str. (RV.II. 34.2, IV. 7.3.) , ṛkṣa (RV. I. 24.10.).
- 22) Str in the sense of decking the sky is an Indo-European word. H/o Dh. V.1.p.496.
- 23) Rocanā ‘the bright sky’ Apte, , p.472.
- 24) Vedic Index, p.409.
- 25) अथो नक्षत्राणामेषामुपस्थे सोम आहितः। RV. X 85.2; AV 14.1.2.
- 26) Also Kāthaka. Sañhitā. X. 19.1, Mahābhārata ix. 35.
- 27) Tiṣya (Puṣya) in RV. X. 64.8; Citrā. RV. IV. 51.2; Revati RV. IV.51.47.
- 28) The 28th is Abhijit mentioned in AV. 19.7.2-5 and Mai. Sañ. II.13.20. Tai: Brā. I.5.2 marks it as a new comer where as Mahābhārata (Vanaparva III.230) mentions it as being dropped out.
- 29) Tai. Sañ. IV..4.10.1-3; Kāthaka. Sañhitā. 39.13; Tai Brā. I.5, III.1; Vedānga Jyotiṣa (RV) 25,26.
- 30) History of Dharmaśāstra, Vol. V.1,p.509; Bhāratīya Jyotiṣaśāstra. p.52.
- 31) ‘Āśreṣā’ the embracer which fits the constellation, ‘Citrā’ meaning bright or ‘Śatabhiṣak’, having hundred stars. Vedic Index p.416.
- 32) Punarvasu, Citrā, Maghā, Revati. Bhāratīya Jyotiṣaśāstra p. 57.
- 33) Ārdrā, moist or wet, in solar connection with rain. H/o Dh. V.1. p.509.
- 34) Hasta, the shape of hand or palm, Puṣya , the golden boat in the sky (AV.5.4.4, 6.95.2); यानि वा इमानि पृथिव्याश्चित्राणि॥ तानि नक्षत्राणि॥ Tai.Brā. 1.5.2.
- 35) Niṣṭyā (Swāti) means ‘outcaste’ in Rg. VI. 75.19, X. 133.5; Śronā (Śravaṇa) means ‘lame’ (RV. I.112.8); Mūla as ‘root’ or ‘foot’ RV.X.87.10.
- 36) हस्त एवास्य हस्तः।चित्रा शिरः। निष्ठ्या हृदयम्। उरू विशाखे। प्रतिष्ठा अनुराधाः। एष वै नक्षत्रियः प्रजापतिः। Tai. Bra. I.5.2-7, Bṛhat-Sañhitā (104.1-5); ‘The Nakṣatra Puruṣa cannot be made fit to the comtellations’. Hindu Astronomy .p.24.
- 37) History of Dharmaśāstra, Vol. V.1., p.509.
- 38) Vedānga Jyotiṣa (RV. 25-27); Bṛ. Sañ. 97. 4-5; Bṛ. Sañ. 98.3
- 39) Bhāratīya Jyotiṣaśāstra, p. 470.
- 40) Śat. Brā. II. 1.2.
- 41) Bṛ. Up. VI.3.1.

- 42) Br. Saṁ. 97. 6-11.
- 43) Gobhila-Gṛhyasūtra. II.1.1.
- 44) Kṛttikā marked the Vernal Equinox in circa 3100 B. C. Dikshit calculates this date from a verse in Śat. Brā. (II.1.2.3). Bhāratīya Jyotiṣaśāstra) p.128.
- 45) History of Dharmaśāstra, Vol. V. 1. p.507.
- 46) Hindu Astronomy pp. 30-32.
- 47) Orion p. 166, referring to RV. X. 86.22.
- 48) Vedic Chronology, Introduction p.5. A supposition of an pre-orion or Aditi period when the Vernal Equinox coincided with the constellation Punarvasu (around about 8000 - 5000 BC which was the period of migration of the surviving Āryans following the destruction of the original Arctic home by the last Ice age) also exists. 'The Arctic Home in the Vedas' in Samagra Lokmanya Tilak, Vol. II, p. 372.
- 49) Hindu Astronomy, p.29. The knowledge was marked due to inaccurate length of the year and crude methods of fixing the solstices.
- 50) Vedāṅga Jyotiṣa (RV) v.36.
- 51) एकं द्वे त्रीणि चत्वारि वा अन्यानि नक्षत्राण्यथैता एव भूयिष्ठा यत्कृत्तिकास्तद्भूमनमेवैतदुपैति। तस्मात्कृत्तिकास्वादधीत। एता ह वै प्राच्यै दिशो न च्यवन्ते सर्वाणि ह वा अन्यानि नक्षत्राणि प्राच्यै दिशश्च्यवन्ते। Śat. Brā.II. 1.2. 2-3.
- 52) देवगृहा वै नक्षत्राणि। एवं वेद गृह्येव भवति। Tai. Brā. I.2.5.11
- 53) Tai. Saṁ. 5.4.1.3, Śat. Brā.VI. 5.4.8.
- 54) यो वा इह यजते अमुं लोकं नक्षते । तन्नक्षत्राणां नक्षत्रत्वम्॥ Tai. Brā. 1.5.2.10.
- 55) RV. I.50.2, II .34, IV. 7.3, X. 68.11.; Tai. Saṁ. 7.5.25; Tai. Brā. 2.7.18.3, This is also accepted by modern science. Basic concept of Nakṣatras, p. 25.
- 56) Webster's Dictionary p. 571.
- 57) Webster's Dictionary p. 2.
- 58) Vedic Mythology, p. 22.
- 59) Kaye summarizes the characteristics of the group. Hindu Astronomy p. 103.
- 60) The Religion and Philosophy of the Veda and Upanishads p. 99.
- 61) XIII. 3.13.; IX. 3.18.
- 62) Hindu Astronomy, p. 104.

- 63) Vedic Mythology, p. 38.
- 64) Also Yāska equates him with the Sun (Nirukta vii.9).
- 65) The Religion and Philosophy of Veda and Upanishads p. 113.
- 66) RV. X. 39. 2.
- 67) Śat, Brā. X. 5.2.4.
- 68) Vedic Mythology, p.81.
- 69) History of Sanskrit Literature, p.25.
- 70) Vedic Mythology, p. 72.
- 71) As golden (RV. V.2.3) or golden form (RV.IV.3.1), as bright flamed (RV. VII.15.10), as brilliant history (RV.II.10.2).
- 72) The nine planets with their various names are enumerated in Bṛhat Jātaka (II.2-3), Sārāvalī (IV.10-11).
- 73) A planet is one of a body in space other than a comet, meteor or satellite / which revolve around the Sun of the Earth's solar system / shining by reflected light from the Sun / any similar body revolving about a star. Webster's Dictionary, p.768. In this sense Sun and Moon are not planets. Also Rāhu and Ketu do not fit the definition. They are the ascending and descending nodes of the orbit of the Moon (Pañcasiddhāntikā ix.6).
- 74) For Horoscopy which is based on the system of bhāva, Rāsi divisions and Planets and which predicts life of an individual.
- 75) Planet comes from a Greek word meaning 'wanderer' H/o Dh.V.1 p.570, Also horos (boundary) and other are Greek terms. H/o Dh. V.1.p.554, Preface to Bṛhat Samhitā p.28, Also Bṛhat Samhitā II. 15, History of Indian Literature, pp. 254-255.
- 76) 34 lights in RV. X. 55.3 (Ludwig and Oldenberg), seven Ādityas in RV.IX.114.3 (Oldenberg), five Adhvaryus in RV.III.7.7 (Hillerbrandt) compiled in Hindu Astronomy p.34, H/o Dh. V. I. p. 494, Vena in RV.X.123.2 is equated with Venus in Orion, p. 162.
- 77) RV. IV.50.4; Bṛhaspati is equated with Gurū or Jupiter in later literature, fn 1 above; also Jīvo jñanasukham Bṛhat. Jātaka. II.1.
- 78) The History of Indian literature. p. 249.

- 79) The genuineness of this portion of the text is questioned, Hindu Astronomy, p. 33,
- 80) The History of Indian Literature. p. 250.
- 81) राहौ ध्वान्ते गुणे तमः। Amarkośa 3.3.231.
- 82) Bṛhat Saṁhitā chap. V.
- 83) निर्बन्धोपरगाकार्कदयो ग्रहाः। Amarkośa 3.3.236.
- 84) RV. V. 40.5
- 85) Vedic Index, p. 243
- 86) Hindu Astronomy, p. 36
- 87) The History of Indian Literature, p. 250.
- 88) The Religion and Philosophy of the Veda and Upaniṣads, p. 554.
- 89) Bṛhajjātaka. I. 3.
- 90) Bṛ. Up. IV. 4.16; Chān Up. VIII. 3.4, 4.2; Muṇḍ. Up. II. 2.8.
- 91) RV. X. 121.1.
- 92) Amarkośa I. 1.16.
- 93) RV. X. 129.3.
- 94) Manusmṛti I. 21.
- 95) Bṛ Up. V. 15.
- 96) Chān. Up. III. 19.1.
- 97) Bṛ. Up. IV. 3-7; Chān Up. III 14.2
- 98) RV. I. 115.1, IX. 2.10; VI. 8.
- 99) नाभ्या आसीदंतरिक्षं शीर्ष्णोद्यौः समवर्तत॥ पदभ्यां भूमि Puruṣasūkta.
- 100) तिस्रो द्यावः सवितुर्द्या उपस्थां एका यमस्य भुवने विराघाट्॥ आर्णि न रथ्यमृताधि तस्युः RV. I. 35.6.
- 101) सिद्धांतसंहिताहोरारूपं स्कंधत्रयात्मकं। वेदस्य निर्मलं चक्षु ज्योतिः शास्त्रमनूत्तमं॥ 1Nārada Saṁhitā I.4.
- 102) गणितेन वा ग्रहगतितन्त्राभिधानस्त्वसौ। Bṛhat-Saṁhitā I.9.
- 103) History of Dharmaśāstra, V. 1, p. 484.
- 104) मुखं वा एतद् ऋतूनां॥यद्वसंतः॥ Tai Brā 1.1.2.6,7
- 105) RV. I. 164. 11-13, 48; Śat. Brā. IX. 1.1.43; Ait. Brā. VII. 7.
- 106) Tai. Saṁ. IV. 4.11 names the months in accordance with the ṛtus. Mahābhārata (Udyoga Parvas 83.7, Vanaparva 182.16) retains the names of ṛtus but furnishes different. names for months.

- 1107) तस्मादादित्यः षण्मासो दक्षिणेनैति षडुत्तरेण। Tai. Sañ. VI. 5.3.
- 1108) Aitareya Brāhmaṇa IV. 18.
- 1109) यां पर्यस्तमियादभ्युदियादिति सा तिथिः॥ Aitareya Brāhmaṇa 32.10.
- 1110) 3 or 5 parts (Tai, Brā. 3.12.9.1 , 1.5.3), 30 parts (Tai. Brā 3.10.9.).
- 1111) Ādīparva 123.6; Bhāratīya Jyotiṣaśāstra p. 98.
- 1112) Muhūrta and Kṣaṇa (Nirukta 1.25.); Pāṇini mentions Muhūrta (3.3.9.) and perhaps bāḍi (5.4.159.) according to Dikshīt, (Bhāratīya Jyotiṣaśāstra, p.102) was a division of time. Also kāṣṭhā and kalā (Śāntīparva 7.2.). Two Nāḍikās = one Muhūrta (Vedāṅga Jyotiṣa. (RV).7.).
- 1113) Yuga comprises a short as well as a long period. H/o Dh. V. 1 p. 486.
- 1114) एकं वा एतद्देवानामहः॥ यत्संवत्सरः॥ Tai. Brā. 3.9.22.
- 1115) Viṣṇu Purāṇa VI. 3.11, 12.
- 1116) वेदा हि यज्ञार्थमभिप्रवृत्ताः कालानुपूर्व्या विहिताश्च यज्ञाः। तस्मादिदं कालविधानशास्त्रं यो ज्योतिषं वेद स वेद यज्ञम्। Vedāṅga Jyotiṣa (Yajurveda) verse 3.
- 1117) Certain Mesopotamian concepts were introduced to Indian Astronomy in Vedāṅga Jyotiṣa. Jyotiṣśāstrā p. 10.
- 1118) The unit of measurement is the Nakṣatra and not the degree. Hindu Astronomy, p.18.
- 1119) These are shifting points and their changing positions are mentioned in various texts in relation with the Nakṣatras. Suryaprajñapti marks the (Udagayana) (winter solstice in Abhijit, Pañcasiddhāntikā (iii.25) marks it in the first point of Capricorn (Rāśi) and Mahābhārata (i. 71.34) in Śravaṇa.
- 120) Ayana means ‘motion’ or ‘path’ āyan-n-āpo ayanam - iccha - mānāh, RV. III. 33.7.
- 121) प्रपद्येते श्रविष्ठादौ सूर्याचांद्रमसावुदक्। सार्पार्थे दक्षिणार्कस्य माघश्रावणयोः सदा॥ Vedāṅga Jyotiṣa (RV). 6.
- 122) Hindu Astronomy, p. 27.
- 123) एकविंशमेतदहरूपयन्ति विषुवन्तं मध्ये संवत्सरस्य। Ait. Brā. IV. 18.
- 124) Vedāṅga Jyotiṣa (RV) 25, 26, 27.
- 125) Vedāṅga Jyotiṣa (RV) verse 3.
- 126) Matsya Purāṇa 11.37-38; Padma Purāṇa V. 8.72-73.
- 127) Siddhāntaprākkāla and Jyotiṣiddhāntakāla Bhāratīya Jyotiṣaśāstra. P.11.

- 128) History of DharmaśāstraV. 1 pp. 514-519, Siddhānta period is after Greek invasion from 100 BC to 1000 AD upto Bhaskaracārya and carried Greek elements. Bhārātīya Jyotiṣaśāstra, Praśamsana, p.2,3; Varāha mentions the Greek method of Siddhānta. Hindu Astronomy, p.64..
- 129) Bhārātīya Jyotiṣaśāstra, p. 185.
- 130) त्रुत्यादिप्रलयांतकालकलनामानप्रभेदः क्रमाधाराश्च द्युसदां द्विधान गणितं प्रश्नास्तथा सोत्तराः। भूधिष्ण्यग्रह संस्थितेश्च कथन् यंत्रादि यत्रोच्यते सिद्धांतः स उदाहृतोऽत्र गणितस्कंधप्रबंधे बुधैः॥ Siddhānta Shiromaṇi I. 6.
- 131) Karaṇas are sequels to Siddhāntas. These are concise texts which emphasize on pragmatic rules for computations. Jyotiḥśāstra, p. 32. Varāha addresses his Pañcasiddhāntikā as a karaṇa. Preface to Br.sām. p. 24. Karaṇa texts are chiefly used for preparing pañcāṅga. Bhārātīya Jyotiṣaśāstra, p. 372.
- 132) Pingree mentions five schools the other two being Ardharātrika (= Āryapakṣa) and Gaṇeṣa. Jyotiḥśāstra p. 13,14.
- 133) Paitāmahasiddhānta in Varāhas Pañcasiddhāntikā (12.1-5) is the oldest amongst the Prācinsiddhāntapañcaka and relates it to the Brahmasiddhānta referred or mentioned by Brahmagupta in his Siddhānta (I-2) Bhārātīya Jyotiṣaśāstra, p. 152. Pingree, Jyotiḥśāstra p.17 differs as Paitāmahasiddhānta incorporated in the Viṣṇudharmottara is according to him the earliest. A third Paitāmaha or Brahmasiddhānta is related to Śākalyasamhitā Bhārātīya Jyotiṣaśāstra p.151.
- The Prācinsiddhāntapañcaka (पौलिशरोमकबसिष्ठसौरपैतामहास्तुपञ्चसिद्धांताः) are mentioned in Varāhas Pañcasiddhāntikā. These are non-extant and composed before the Śaka era. According to Thibaut they are composed around 400 A.D. Bhārātīya Jyotiṣaśāstra p.160. the Prācinsiddhāntapañcaka, the modern five viz. Sūrya, Soma, Vasiṣṭha, Romaśa and Brahmasiddhānta (in Śākalya Samhitā) and Brahmasiddhānta (Paitāmahasiddhānta) in Viṣṇudharmottara are Apauruṣeya. Bhārātīya Jyotiṣaśāstra p.169.
- 134) In five year cycle (of 1830 days), the year can beginning with Śraviṣṭhā and calculation of the length of the day. It differs from Vedāṅga Jyotiṣa in length of the year and adds Bhaunumādi (Mars and the rest) planets to Sun and Moon.

- 135) Bhāratīya Jyotiṣaśāstra, p. 151.
- 136) Of 365 days 14 ghatīs and 48 palas.
- 137) For which accused by Brahmagupta. While the other Romaka by Sriṣena mentions Yuga. (11.55).
- 138) सप्तश्विदे संख्यं शककालमपास्य चैत्रशुक्लादौ। अर्धास्तमिते भानौ यवनपुरे भौमादिवसाद्यः॥ Romaka Siddhānta I. 1 (Pañcasiddhāntikā verse 8)
- 139) Sūrya Siddhānta (Madhyamādhikāra verse 25).
- 140) Sūrya Siddhānta II. 3, Hindu Astronomy, p. 85.
- 141) Paitāmahasiddhānta chap. I and II deal with Astrology, Jyotiṣśāstra, p. 17.; such a composite form is also displayed in Śārdulakarṇāvdāna, a divination text in its chap. 33 (Divyāvdāna) which deals with Astronomy. Jyotiṣśāstra,, p. 10.
- 142) गणितं जातकं शाखां योवेत्ति द्विजपुङ्गवः। त्रिस्कन्धज्ञो विनिर्दिष्टः संहितापारागश्च सः॥ Garga quoted by Utpala on Bṛ. Saṁ I. 9.
- 143) In this sense, Kern terms it as a '*phalagranth*', Preface to Bṛ. Saṁ. p 22.
- 144) Jyotiṣśāstra, p. 71.
- 145) As quoted by Vasantarāja Śakuna, History of Dharmaśāstra V. 2 p. 806.
- 146) Weber traces the origin of the link of omens and portents with the Indians way back to the primitive Indo-Germanic period. The History of Indian Literature, p. 264.
- 147) Śakuni (RV. II. 42.1, 43.2 , 3).
- 148) Kapota (RV. X. 165) ; elephants (Bṛ. Saṁ. 98. 1-14.). Horses (Bṛ. Saṁ. 92. 1-14.), Bṛhat Yogayātra 22. 1-4, Yogayātra XI 1-14, on cries and movements of birds and animals (Śakunārṇava by Vasantarāja varga I-XX), Gargasamhitā Aṅga. 42, 46-50.
- 149) Bṛhadyogayātrā XIII .1; Vasantarāja Śakuna VI. 4.10; Bṛ. Saṁ. (51.10), Śākuntala I.11. Matsyapurāṇa 241. 1-14; Bṛhadyogayātrā XIII 1-10.
- 150) RV. VIII. 47.15; Aitareya-Araṇyaka iii. 2.4.
- 151) Śat. Brā. IV. 5.8.11.; ŚGS v. 11.10.
- 152) Bṛ Saṁ. 45. 82-95.
- 153) Garga Samhitā aṅgas 32-34.
- 154) Jyotiṣśāstra, p. 75.
- 155) Apte, p.13.

- 156) History of Dhamaśāstra, Vol. V. 2, p. 741
- 157) Indra, Varuṇa, Yama, Agni, Vaiśravaṇa, Viṣnu, Vāyu,
- 158) Apte.p. 102.
- 159) Bṛ Sam. 45.1.
- 160) उत्पाताः पार्थिवान्तरिक्षाः शं नो दिविचरा ग्रहाः। Atharvaveda 19.9.7 दिव्यान्तरिक्षा भौमं च त्रिविधं संप्रकीर्तितम्। Matsya Purāṇa 229.6 तेषां द्यौन्तरिक्षं भूरेताश्चाश्रयः। Garga quoted by Adbutasagara and Sabhāparva 46.8,9.
- 161) Here nimitta carries the sense of Aṅgavidyā though Manusmṛti (VI.50) mentions Nimitta and Aṅgavidyā separately.
- 162) Apte, p. 289.
- 163) H/o Dh. V. 1, p. 522,
- 164) For instance Gargasamhitā.
- 165) Aitareya-Āraṇyaka III. 2.4.
- 166) Preface to Bṛhat-Samhitā, p. 36.
- 167) जन्मजन्मान्तरकृतं पुंसां कर्म शुभाशुभम्। यत्तस्य शकुनः पाकं निवेदयति गच्छवाम्॥ Bṛhadyogayātra 23.1.
- 168) H/o Dh. Vol. V.I. p. 543.
- 169) कालः शुभक्रिया योग्यो मुहूर्त इति कथ्यते। Muhūrtadarśana I. 20.
- 170) Ātharvaṇa-Jyotiṣa I. 6-11, earlier in Tai. Br. III. 10.1.1-3.
- 171) Bṛhad Yogayātra VI. 2.4.
- 172) Ātharvaṇa-Jyotiṣa II. 1-11, III. 1-6.
- 173) Ātharvaṇa-Jyotiṣa VII. 12, 16.
- 174) RV. III. 8.5 जातो जायते सुदिनत्वे अह्नां समर्थ आ विदथे वर्धमानः। Also Tai. Brā. 1.52 which mentions the success of an act performed on an auspicious time.
- 175) Bhāratīya Jyotiṣaśāstra. p.97.
- 176) Bhāratīya Jyotiṣaśāstra. p. 520.
- 177) With the aid of an horoscope. Horoscope or kundali is a chart displaying the position of planets in different quarters of the sky at the moment of birth of an individual. It divides the zodiac in twelve equal parts specified by Rāsis or Signs.

- 178) Lagna is the starting point of the Kundali which coincides with the point of birth. It specifies the zodiacal sign rising on the eastern horizon at the moment of birth of an individual. The term Lagna appears in Vasiṣṭha Siddhānta with a similar meaning as in Jātaka. Bhāratīya Jyotiṣaśāstra, p. 517.
- 179) Apte, p. 644.
- 180) H/o Dh. Vol. V.1, pp. 549-551.
- 181) Jyotiḥśāstra, p. 81.
- 182) जातकमिती प्रसिद्धं यल्लोके तदिह कीर्त्यते होरा। Sārāvali II. 4.
- 183) History of Dharmaśāstra, Vol. V. 1, p. 479-480.
- 184) Garga quoted by Varāha in Bṛhat-Saṁhita II. 15.
- 185) Bhāratīya Jyotiṣaśāstra, p. 482.
- 186) Ancient Sanskrit literature, Introduction, p. 42.
- 187) होरेत्यहोरात्रविकल्पमेके वाञ्छन्ति पूर्वापरवर्णलोपात्। Brhājātaka. Also Sārāvali II. 2.
- 188) History of Dharmaśāstra, Vol. V. 1. p. 585.
- 189) History of Dharmaśāstra, vol. V.1, p.597, ff. 892.
- 190) अथवा दैवविमर्शनपर्यायः खल्वयं शब्दः॥ Sārāvali II. 4.
- 191) Horoscopy believed to be borrowed from the Babylonians and Greeks had no (generally believed) doctrine of Karma and Punarjanma. H/o Dh. V.1, p. 546.
- 192) कर्माजितं पूर्वभवे सदादि यत्तस्य पङ्क्ति समभिव्यनक्ति॥ Bṛ. Jā. I.3. यदुपचितमन्यजन्मानि शुभाशुभं तस्य कर्मणः पङ्क्ति । व्यञ्जयति शास्त्रमेतत् तमसिद्रव्याणि दीप इव॥ Laghujātaka I.3 quoted by Utpala on Bṛ. Jā. I. 3.
- 193) Such an instance is mentioned in Bhāratīya Jyotiṣaśāstra pp. 478-480. Dikshit concludes (of Sāmuḍrika Jyotiḥśāstra) from this that planets share a relation with human and his life.
- 194) Interrogations or Praśna and Tājika (Solar return) also answer about the future from a horoscope which is based on the moment of question and the solar return instead of the birth point as Lagna.
- 195) Pingree includes Śulbasutras in his list of topics related to Jyotiḥśāstra. Jyotiḥśāstra, p. 3.

- 196) Jyotiḥśāstra, p.2, 56. Earlier Mathematics was connected to Jyotiḥśāstra, and most Mathematician were Astrologers.
- 197) Dikshit mentions this connection from a passage in Tai. Brā 3.10.9. Bhāratīya Jyotiḥśāstra, , p. 69.
- 198) Vāj. Saṁ. XXX. 10, 20; Tai. Brā. IV. 5.
- 199) पृथगेवैतस्य ज्ञानस्याध्यायो भवति, अधीयीत वा तद्विद्वद्भ्यो वा पर्व आगमयेत। Gobhila Gṛhyasutra I.5.13.
- 200) Arthaśāstra VI. 4.
- 201) Enumerated on p. 527, H/o Dh. V.1
- 202) षडङ्गो वेदः छन्दः कल्पो व्याकरणं ज्योतिषं निरुक्तं शिक्षा छन्दो विचिदिरिति। ĀpDS II. 4.8.11.
- 203) History of Ancient Sanskrit literature, p. 56.
- 204) ज्योतिषामयनं चक्षुः। Pāṇinīya Śikṣā.41.
- 205) History of Ancient Sanskrit Literature, p. 263.
- 206) Hindu Astronomy, p. 24.
- 207) Colebrooke Essays, ii, p. 373.
- 208) √ kṛ II.8 U.
- 209) Apte, p.136.
- 210) RV. VI. 51.7.
- 211) RV. III. 38.2.
- 212) RV. I. 22.19, 101.4; RV. X. 54.4.
- 213) RV. I. 148.2 , VIII . 36.7, IX .96.11.
- 214) Termed as iṣṭāpūrta. Tai. Saṁ. V. 7.7.2.
- 215) यज्ञो वै कर्म। Śat. Brā. I. 1.2.1 यज्ञो वै श्रेष्ठतमम् कर्म। Śat. Brā. I.7.1.5; Tai. Brā. III. 2.1.4
- 216) कर्मणा पितृलोकः विद्यया देवलोकः। देवलको वै लोकानां श्रेष्ठ तस्माद्विद्यां प्रशंसन्ति।। Bṛ. Up. I. 5.16.
- 217) Bṛ. Up. III. 8.10.
- 218) पुण्यः पुण्येन कर्मणा भवति, पापः पापेन। Bṛ. Up. 4.4.5.
- 219) Atharvaveda XVIII. 2.57.
- 220) Chān. Up. 5.10.3, Muṇḍ. Up. 1.2.10.
- 221) Iśā Upaniṣad 9.

- 222) Brahman beyond good and evil (Br. Up. 4.3.22), Chān. Up. 4.14.3. magnifies the state of a knower of Brahman.
- 223) Mahābhārata 1.75.2.
- 224) Brahma Purāṇa 35.31-60.
- 225) Mahābhārata 1.86.7, 1.76-91, 5.118-120.
- 226) Uttarādhyayana Sūtra 33.17-18.
- 227) कर्मभिः प्राणिनाम् लोके सर्वचेष्टाप्रवर्तकः। Vāyu Purāṇa 31.42.
- 228) Padma Purāṇa II. 94.8.
- 229) सर्वस्य प्रसविता। Nirukta 10.31.
- 230) Vedic Mythology, p.34.
- 231) RV, I, 92.9; VII. 77.1.
- 232) Atharvaveda XIX. 58 (10 verses), 54 (5 verses).
- 233) यतो वा इमानि भूतानि जायन्ते येन जातानि जीवन्ति यत्प्रयन्त्यभिसांविशन्ति तद् विजिज्ञासस्व। तद् ब्रह्मेति। Tai.Up. III. 1.
- 234) कर्मबीजं मनस्पंदः Yogavāsiṣṭha Rāmāyaṇa III. 96.11.
- 235) चेतना कम्मम्। Aṅguttaranikāya iii. VI. 63.
- 236) Yogasūtra II. 13.
- 237) Guṇas of Prakṛti (Gītā 3.28, 14.19).
- 238) Nyāya Bhāṣā 4.1.21.
- 239) Mahābhārata 3.33.20.
- 240) Mahābhārata. 13.13.5.
- 241) यत्कालम् हि यत्सुखम् दुःखम् वा आत्मना भुञ्जयति तस्मैव लोके फलत्वम् प्रसिद्धम्। Śāṅkarabhāṣya on Brahmasūtra III. 2.38.
- 242) Padmapurāṇa II. 94.11.
- 243) Sāṅkhyapravacanasūtra 6.67.
- 244) Yogasūtra II. 13, Also Mahābhārata 12. 233.11.
- 245) Karma and Rebirth in the Dharmaśāstras p.80 in Karma and Rebirth in Classical Indian Traditions, p.80.
- 246) Pūrvāparādhajaḥ is one of the three classes of diseases, Aṣṭāṅgahṛdaya, Sūtrasthāna I. 12.57. Also Vasiṣṭha (20.43-44) relates illnesses to mortal sins of previous lives.

- 247) Caraka Saṁhitā IV. 2.36.
- 248) कर्मजन्योपभोगार्थम् शरीरम्। Ślokavārttika 19.109.
- 249) Tantravārttika II. 1.2.
- 250) Śābarabhāṣya 4.3.27.
- 251) ĀpDS 2.1.2.2.
- 252) Gītā 14.18.
- 253) निर्दिष्टम् दैवशब्देन कर्म यत् पौर्वदेहिकम्। Caraka Saṁhitā (Śārirasthāna) IV. 1.116.
Matsyapurāṇa CCXXI. 1. 5 Mahābhārata 3.33.18.
- 254) Rāmāyaṇa 2.19.20.
- 255) Mahābhārata 3.32.33; Daiva etymologically means 'that which pertain to the gods'
(*devas*).
- 256) Karma as an 'action requiring some effort' Caraka 1.1.49-56.
- 257) Dīgha II. 19-20.
- 258) मानुष्याद्देवताम् गताः I Mahābhārata 13.6.14; Matsyapurāṇa CCXXI.2.
- 259) कृतः पुरुषकारस्तु दैवमेवानुवर्तते I Mahābhārata 13.6.22.
- 260) Caraka Saṁhitā III. 3.29 , 36.
- 261) दैवम् पुरुषकारश्च द्वयम् पुंसः फलावहम्। Agni Purāṇa CCXX VI.1.3.
- 262) Matsyapurāṇa (221.8).
- 263) Yogasūtra II. 12, 13.
- 264) Brahmasūtra 4.1.19.
- 265) Gītā 14. 5-9.
- 266) Kāya, Vācī, Manokamma, Majjhimanikāya 56.
- 267) RV. X. 14.8, Atharvaveda XI. 6.11, 1.3.
- 268) Garuḍapurāṇa II.5.47, 10.20.
- 269) RV. VII. 86.5.
- 270) RV. VI. 51.7, VII. 52.2.
- 271) Karma theory in some Indian Philosophical Systems, p.266.
- 272) RV I 125.2, Matsyapurāṇa LXXXIII to XC II.
- 273) Gautamadharmasūtra 19.12, Yāj. Smṛ. III. 301-304.
- 274) Manusmṛti XI. 116-17, 131-32, 170-71, Milindapañha IV. 1.2.

- 275) Tai.Saṁ. VI. 1-1, Kūrmapurāṇa II. 34.142.
- 276) Chānd. Up. 5.10.7, Praśna Upaniṣad III.7.
- 277) Sarvadarśana-Saṁgraha 15.23.
- 278) Bṛ. Up. 4.4.7, Muṇḍ. Up. III. ii.1.
- 279) Gītā 3.7; 18.2, 6; 5.10; 4.20.
- 280) Śāṅkarācārya's commentary on Brahmasūtra 3.2.40
- 281) Brahmasūtra Śāṅkarabhāṣya 3.2.38,41.
- 282) अविद्या काम कर्म वासनाश्रय लिङ्ग उपाधि आत्मेष्ट्वरौ। Śāṅkarabhāṣya on Muṇḍ. Up. 3.1.1.
- 283) Sūtrakṛtāṅga 2.1.13,
- 284) Matsya Purāṇa CL IV. 147-152,
- 285) Śrībhāṣya on Brahmasūtra 1.2.1.
- 286) Yogasūtra II. 12.
- 287) Caraka Saṁhitā IV. 2.36.
- 288) Yogavāsiṣṭha Rāmāyaṇa III. 54.29.
- 289) Encyclopaedia of Religion and Ethics, Vol. IV., 484 b.
- 290) कर्मजा गतयो नृणाम्। Manusmṛti 12.3.
- 291) RV. I. 164.30.
- 292) Five types of Gatis are listed in Dīgha Nikāya 3.234, Majjhima Nikāya 1.73.
- 293) Sugati (pleasant course) or duggati (unpleasant course) depending on the conduct, Majjhima Nikāya 3.178.179.
- 294) Sarvārthasiddhi 2.25.
- 295) भूतभावोद्भवकरो विसर्गः कर्मसंज्ञितः। Gītā VIII. 3.
- 296) कर्माण्यजन्मानि कृतम् सदसच् च दैवम्। Yogayātra 1.3.
- 297) Niyati, diṣṭa, bhāgya, vidhi. Amarkośa 1.4.28.
- 298) Relating to Gods, Apte p.261.
- 299) ईश्वरस्तु फलम् ददातीत्यनुपपन्नम्। Vedāntasūtra 3.2.41. Śāṅkarabhāṣya on this explains that the fruit come from the gods in accordance with the acts done by the individual.
- 300) Suśṛta Saṁhitā 1.24.7., or *daivakṛta*. Rāmāyaṇa. 2.19.16, 6.98.23.
- 301) Matsya Purāṇa 221. 1-12.
- 302) कर्मणा कालयुक्तेन तथेदम् भ्राम्यते जगत्। Mahābhārata 12.34.

- 303) कालः पचति भूतानि कालः संहरति प्रजाः। Mahābhārata I 1.188.
- 304) Mahābhārata 12.220 97-98.
- 305) Bhāratiya Jyotiṣaśāstra, p. 216.
- 306) Aitareya Brāhmaṇa III. 44.
- 307) Mahābhārata 12.206.13.
- 308) Rāmāyaṇa 3.28.7.

Chapter III

Development of Jyotiḥśāstra and Karman in the Literature

The form of Karman and the conception and accordingly the utility of Jyotiḥśāstra carries a variance in the culture. The correlation thereby appears phase wise and can be divided into five broad periods, the Saṁhitā Period, the Brāhmaṇa Period, the Upaniṣad Period, the Smṛti or Vedāṅga Period and the post-Greek or Varāha Period.

A. Saṁhitā Period

In the early Saṁhitā period the foremost aspect of Vedic religion appears in a mythological form. The Ṛgveda is an expression of human conception about the natural powers in the forms of personifications and worship of an aggregate of nature and light deities, invoked in the sacrificial rituals.

The attributes of these deities were essentially the multiple forms of the animated cosmos personalized by the Vedic men in communion with human qualities and actions. Worship of these deities were supposed to sub serve their ideals and purposes regarding the present life and the future one.

While the speculations related to cosmology were getting pantheistic (RV.X.90), the elementary study of Sun and Moon as technical time measuring devices was getting systematized into various divisions of cosmos brought forth by the luminaries, its qualities being studied for ritual utility from Vedic point of view. Ritual actions were already in an organized form with worship in Atharvaveda in the form of domestic and magical rites, more so in the Yajurveda where correct performance of sacrifices was the principal aim, the nature deities of Ṛgveda being loosely connected with the actual ritual. Proper time to conduct the sacrificial rites was the chief requisite for which the actions of heavenly bodies were observed. Since the sacrifices came with specific purposes relative to man as well as cosmos, unraveling the skies for its fulfillment seemed to be a regular practice.

The Correlation exists in the above senses in the Samhitās.

1. Ideology in the Samhitā Period

i. Ideas of Truth and Falsehood

The ideas of truth and falsehood are distinctly expressed through the medium of deities. Truth (Satya) regulated the work in the skies (RV.X.85.1, AV.14.1.1).the deeds of the deity Indra were declared to be true. (RV.II.15.1,VI. 27.1-2). Satya was virtuous and often praised whereas falsehood was erroneous. The Ādityas watched the good and evil in men, they hated falsehood and punished sin. (RV.II.27.4,VII.52.2). Pāpa is the term for evil (RV.X.10.12, IV. 5.5, VII.52.18) or sin and connected with sins for punishment to sinners as well as releasing them from sins is chiefly the deity Varuṇa,¹ the guardian of the moral law prevailing in the nature. An effort to make this moral law a counterpart of the physical order law of ṛta in the universe, the occurs in the Ṛgveda. The term Anṛta as contrary to Ṛta (RV.I.105.5) in the sense of an immoral act is expressed in RV. X. 10.4. Ṛta (order) and Satya (truth) appear together in the late ṚV (IX.113.4, X.190). Anṛta means falsehood (anṛta asatyaḥ) in RV. IV. 5.5 and comes as opposed to Ṛta and Satya in Mai. Saṁ. I.10.11.

Righteousness was believed to lead to the region of eternal light. Savitṛ was prayed to carry the spirit to the world of the righteous (RV.X.17.4).Heaven as the place of eternal light (RV.IX.113.7-9) as the highest (AV.II.4.11.), luminous world (AV. 4.34.2) where the righteous dwell (RV. X. 16.4) is often mentioned.

Inversely falsehood/sin led to the place of lowest (AV.8.2.24) or black darkness (AV.5.30.11) or blind darkness (AV. 5.30.11) termed as Hell or Narakaloka (AV. 12.4.36) where the sinners stayed (Vāj. Saṁ. 30.5.).

ii. Ideals of Human Life

The ideals of human life in this period were believed to be long life, heaven and immortality. While there are prayers for long life² and wishes expressed to the deities to bestow immortality³ active efforts were taken in these contexts to reach the ideals. The place of eternal light (heaven) was believed to be won by good deeds. (RV.I.125.4-6,AV.IV.34.2,5,VI.120.3).Since very early it was deemed a reward and

thereby a place for the valiant men who fought battles and sacrificed their lives (RV. VI.46.12). This place was essentially shared with pitṛs and the gods (RV. X. 14.10). Especially the gods who resided in the heaven and came to earth to receive the offerings made in the sacrifices.

These gods were not originally immortal, they themselves were receivers of immortality obtained by them from other gods.⁴ They were first men and became immortal by their deeds.⁵ Whereas certain deities were postulated as the creators of the world,⁶ they were also considered as originating with various names and forms from a single principle.⁷

iii. Kāla as the Creator

Kāla is made the creator of deities like Prajāpati and also the creator of men (AV. XIX.53, 54). Manu, son of Vivaswant, is designated as the first of men (RV.X. 63.7). Yama, even is the originator of man (RV.X.10) and is made the first of mortals who found out the way to heaven (RV.X.14.2), the idea expressing heaven a reachable place by men through rituals actions.

iv. Order of Ṛta and Dharma

While such cosmological ideology was being formulated, the conversion of Ṛta (cosmic order) into Dharma (order of rituals or sacrifices) was an important development in this period. Ṛta or the “course of things”⁸ systematized as the order in the physical world in the form of the heavenly bodies, as order in the moral world in the form of ‘truth (Satya) and light’ and order in the religious world as ‘rite’. This was perhaps the basis of the correlation of Jyotiṣa and Karma appearing in the later period. To this context the deities were said to be the followers of Ṛta which became an unchangeable law laid down by the gods⁹ and their actions and which was to be followed by men in later RV.(IX.121.1,X.37.5). This was termed as Vrata. Though Vrata, occur with verbs of motion in the RV¹⁰ an effort to establish a relation between cosmic motion and human action is seen in this period. The idea appears to connect practically the physical cosmic order to the moral rules and the ritual practices than prevalent in the culture through the medium of time. Actions against these were Apavrata and were liable to be punished (RV.I.25.1-2). Following the Vedic practices

being a requisite, the non-congnizant was said to be debarred from the Sun (RV.V. 42.9).

The firm belief that the Earth was supported by truth and the sky was supported by the Sun also occurs in this period (RV. X. 85.1). The abstract deity Varuṇa is made the excavator of this path of truth (Satya) and is also said to regulate the actions of the luminaries. This concept of Varuṇa protecting the Sun from falling & making a path for him has a parallel with the Iranian god Ahura¹¹ yet the conception of Varuṇa as the protector of the path of Satya regulated by the luminaries appears to be Vedic. Also statements such as the darkness seizing the Sun could be destroyed by cosmic order and true speech reveal the efforts of the culture to connect the physical and the moral elements. The ideas of Satya thereby pertained to the brightness and the order in nature and an effort to arrange rituals actions on this path of Satya expressed by the order of light forms occur in this period.

2. Jyotiḥśāstra in the Saṁhitā Period

A prime aspect of Jyotiṣa of the Saṁhitā period was to provide visible expressions to the ideology of the Vedic man. Regarding the ideas of light and darkness the physical sun as the natural source of visible light and that the removal of the darkness by his light which caused day and night is recorded in RV (X.37.4), the Moon and his phases were observed, also the epithet of Soma plant as *indu* (bright drop) applied to Moon, with reference to its celestial counterpart on account of its bright and luminous nature provided a source of visible light displaying the quality.

i. Divinations

The divinations recorded in this period also reflect the ideas of auspiciousness and inauspiciousness in terms of light and darkness. The birds of omen mainly black or dark or with frightful appearances such as crow, pigeon and owl were deemed inauspicious.¹² Natural phenomenon as eclipses find reference in early RV (V.40), the cause of the darkness eclipsing the Sun was ascribed to Svarbhānu who was defeated by Indra and Atri, the restorers of the light of the Sun.

End of evil also find an expression in the phenomenon of lightening mythologically expressed as the Vajra of Indra. Though spontaneity in any cosmic event is not a general acceptance, such instances in the sky were in continuous scrutiny of the Vedic man of Ṛgveda. They were termed as *adbhuta* in the very sense of the novelty of these events inclusive of celestial events expounded as the phenomenal works of the deities in this period. These events were essentially portentous and constituted the divination branch of the Saṁhitā Skandha in the later period.

ii. Observance of Cosmic Order

The observance of cosmic order seems to prevail, and along with luminaries as the direct sources of bringing forth this order, the Sun and the Moon also displayed the anatomical qualities of the abstract nature forms and their order. Sun is commonly termed as the eye of the gods,¹³ and both Sun and Moon are the two bright eyes of the abstract Varuṇa¹⁴ or else Sun and Moon are the soul and the mind of the Kālapuruṣa (RV. X.90) or Sūrya is the soul of the universe.

A tendency to connect these visible forms to human life also occurs in the Saṁhitās. Sun was connected with longevity (RV.VIII.48.7). The phenomenon of night enclosed between the Sunset and Sunrise (RV.V.81.4) and such references reflect in later Ṛgveda in the form of a simile to human life, death and immortality. Even day and night are contrasted as death and immortality (RV.X.129).

Existence retained in some unmanifest form after the disappearance of the physical body after death was usually believed in this period. Thereby the cosmic screen exhibited the impressions of virtuous men of the past in the form of stars in the sky.¹⁵ Stars and Moon were supposed to be the dwelling places of man after physical death.

Certain surface markings in the sky depicted the future or after life of man. The highest point of the Sun in the sky denoted the abode of the fathers.¹⁶ Sun also indicated the closing of the sky and was a point to reach by religious men desirous of immortality (RV.IX.113.8). Also the (apparent) motion of the Sun specified the path

of the solar abode seemingly connected with the path of immortality bestowed by Yama. (RV.I.163.2.).

iii. Regions of Brightness

Samhitās record the three regions of the universe (heaven and earth) and the third (aerial) placed in between the two. Pṛthvi, Antarikṣa and Dyaus are mentioned while explaining the deeds of Indra (RV.II.12.1). These are specifically spoken of as the three Dyaus whereas their locations in reference with deities are also mentioned.¹⁷

Jyotiṣa of this period records the three brilliant light forms in the three regions, Sūrya, Soma and Agni, in the celestial, aerial and terrestrial regions respectively. Owing to their physical presence they are less anthropomorphized and are more often the visible operating devices of the abstract anthropomorphic deities.

iv. Sun and Moon

Sūrya or the material Sun is made an instrument used by the gods to measure and establish the world. Varuṇa measures the earth with the aid of Sun also Indrā measures the regions with the Sun.¹⁸ Sūrya representing in the form of fetishes as a wheel the in Vājapeya sacrifice or as a chariot is an early practice which continues in the Samhitās.¹⁹ Either as a measuring instrument or a wheel fetish, in simple terms, due to the constant visibility and the regular motion Sūrya is chiefly a device of time and its divisions.

Whereas Sūrya is a deity as well as a time measure in the Samhitās, Soma as moon is not revered in the form of a deity and appears as a clear measurer of time. The epithet *soma* applied to Moon is a development in the late RV,²⁰ and in the Atharvaveda, *soma* is generally the name of Moon.²¹ The Maitrāyaṇi Samhitā (I.6.9) addresses Moon as *retodhā*, the epithet connecting it with the quality of fertilization.

Amongst the phases of Moon, Paurṇamāsī (Full Moon) was already of prime importance in the period of the Atharvaveda.²² The derivation of the word Amāvāsyā (New Moon) also occurs in the Atharvaveda (VII.79(84)1-4.) where as the eighth lunar day Lafter the Full Moon (Aṣṭakā) was employed for the purpose of offerings to the pitṛs. Though the word Tithi is not mentioned in the Samhitās.

Whereas the observations of the changing phases of the Moon were in the process of development, the connection of Moon with the Nakṣatras was already established in the Saṁhitā period. Soma placed in between the Nakṣatras was an observation of the Ṛgveda (X.85.2), the divisions of Nakṣatras on the track of the Moon and according them with appropriate deities was already complete in this period.²³

v. *Divisions of Time*

Calculations of time and its divisions from the orderly motion of luminaries to arrange ritual actions is an important aspect of Jyotiṣa of this period.

Sun being a natural source of time is a primary time measurer. RV.V.8.1. records Sun as a maker of time. The time periods recorded by means of the Sun in the Saṁhitās are the Ṛtus (seasons), Varṣa (year), Ayana (the winter and the summer solstices) and the Diwas (day).

Sun as the cause of seasons (Ṛtus) is known in the Ṛgveda (I.95.3) and the cycle of Ṛtus is already established in the Saṁhitās.²⁴ Seasons are named,²⁵ whereas 3, 5 or 6 seasons are mentioned in the Saṁhitās,²⁶ six seasons are distributed in twelve months.²⁷

Ṛtus constitute the most natural means of formation of an year. Year or Saṁvatsara²⁸ is a solar division of time in the Saṁhitās. The term Varṣa occurs in RV. V. 58.7, AV. 3.27.6 and Varṣā comes as one of the seasons²⁹ indicating the season oriented terminology of Varṣa as year. The year also include an intercalary month.³⁰

The year is divided in two halves depending on the apparent motion of the Sun in the northern and the southern hemisphere occurs in the Taittirīya-Saṁhitā.³¹

Day (Divas) is either from Sunrise to Sunset or from one Sunrise to the next one.³² RV. VI.9.1 records the term *ahaḥ* to express both the dark and the bright parts of the day. Day is divided in 3 sections in RV³³ and in 4 sections in the AV.9.6.46. Day and night together constitute an Ahorātra (RV.X.190.2.) which equaled with 30 Muhūrtas.

While year is solar, months are lunar in Vedic times. Months are addressed as māsa or māsa, counted with the aid of movement of Moon, as the time period between

two full or new moons. Months ending or beginning with full moon were preferred (Tai. Saṁ. 7.5.3).³⁴ On account of the unisolar calendar a thirteenth intercalary month (Adhimāsa) was calculated.³⁵ Long durations for instance Yuga as a division of time also appears in the Saṁhitās.³⁶

3. Karma in the Saṁhitā Period

i. Cosmic Aspect

The cosmic aspect of Karma appears in the Saṁhitās in the form of actions of the nature and light deities. Account of the spontaneous actions of nature also occurs in the form of divinations. The cosmic light forms and their actions in the nature is the chief aspect of the study of Karma in this period. The interpretation of cosmic actions and arranging human actions accordingly on their motions constitute the other aspect of Karma in the Saṁhitā period.

Actions of deities

Ṛgveda is the expression of works of individual as well as collective actions of deities. The physical as well as the moral actions of deities match with the human qualities and actions. The deities are explained as glorified human beings inspired with human motives and passions born like men but immortal.³⁷ The physical aspect of cosmic action is primarily expressed by Sūrya whose principle action is shining for the world, for gods and for men.³⁸ Worship of Sūrya is already older in this period, being recognized as the support of the universe.³⁹ Sūrya is the material Sun shining forth from the lap of dawn (Uṣas), his various anthropomorphized forms deified as Vivasvant, Savitr, Mitra and Pūṣan. The actions of these and other deities are associated mostly with human welfare.⁴⁰

More intimate to men is Agni, connected through sacrifices. The worship of fire as Agni is an Indian development.⁴¹ Agni has a threefold origin, terrestrial, aerial and celestial owing to which he is often deemed a messenger between gods and man,⁴² addressed as 'ṛtvij' or purohita he is chiefly connected with transmission of sacrifices to the gods. Similar in form with Agni is the exclusively Vedic deity, Bṛhaspati as a dispeller of darkness and founder of light.⁴³ In the Tai. Saṁ.4.4.10.1 he

is the deity of the Nakṣatra Tiṣya. This tendency to connect the abstract deity to some visible light form in order to express the actions of the deity occurs in case of deities like Varuṇa who is made the moral ruler and the visible Sun is made a reporter to Varuṇa who visualizes human actions.

Karma as cosmic order

The law and order in nature is connected to Mitra and Varuṇa, the physical and moral one respectively. Chiefly connected to the order are Savitṛ and Agni along with Mitra and Varuṇa yet the deities in general are the followers of cosmic order and are termed as gopa Ṛtasya (guardians of Ṛta) or Ṛtāyu (practicers of Ṛta) Varuṇa being Ṛtasya Dhartā, the order displayed by the motion of the luminaries.

ii. Human Actions

Apart from the exploits or valiant deeds of gods, the other aspect of Karma in Saṁhitās deal with actions of human chiefly in the form of sacrifices, also inclusive are prayers to gods, praise and offerings to gods, Śānti Karmas and offerings to pitṛs.

Sacrifices were one of the chief form of ritual works of this period. Saṁhitās record religious actions along with prayers to deities (RV.VIII.36.7, IX.96.11.). Domestic and magical rites form the base of the Atharvaveda. These religious works were performed intentionally for wealth, long life and joys of heaven. Immortality was believed to be achieved by giving rise to progeny (RV. V. 4.10) or making offerings to pitṛs through the Śrāddha rites.

Prayers were believed to lead to the desired fruits (RV.VIII.13.6), thereby prayers to deities for longer life (RV.X.164.4, AV.32.4,20.96), for material prosperity (RV.I.1.3,I.36.4), to drive away evil (Vāj. Saṁ.IX.4), and for immortality (RV.X. 52.5) occur in the Saṁhitās.

Praise and offerings in the form of material gifts to gods also constitute the terminology of Karma in the Saṁhitās.⁴⁴

Vājasaneyi Saṁhitā (VIII.13) mentions Agniṣṭoma as a means for expiation of sin performed by self or ancestors whether knowingly or unknowingly.

Sānti Karma or appeasing rites were also performed to avoid misfortunes or evil effects and for happiness (AV.19.9).

Thus, in the Saṁhitās, Karma occurs in the sense of both cosmic as well as human actions.

4. Correlation in the Saṁhitā Period

i. Divinations and Countermeasures

The interpretation of the spontaneous actions of cosmos for human future and countermeasures for cosmic actions deemed inauspicious constitute one of the aspects of the correlation of Jyotiṣa and Karma in the Saṁhitā period.

Saṁhitā period considers actions of specific birds as indicators of good and evil. References of ominous birds occur in early RV and continue in the Saṁhitās.⁴⁵ Birds are addressed as Bhadravādi, Sumaṅgala and Śakuna.⁴⁶ Cries of birds were considered as a pointer to forthcoming events.⁴⁷ Birds like Kapota (pigeon) and Ulūka (owl) were pondered as messengers of Yama, foretelling death or evil death.⁴⁸ Actions of deities like Sūrya, Agni were designated as a flying eagle (RV.VII.63.5.) or an eagle (RV.VII.15.4.) respectively. Agni is also called a divine bird (RV.I.164.52.) and also a haṁsa (RV.I.65.9.).

Animals like dogs were considered unfavourable as being connected with Yama and his track and indicative of death. (RV.X.14.10-12.). Whereas goat is considered auspicious as related to the deity Pūṣan and one who led the sacrificial horse (RV.I.162.2.3.). Horses were connected with prosperity and auspiciousness due to their connection with sacrifices, also praise is offered to the horse Dadhikrāvan in Ṛgveda.⁴⁹

Utpātas were considered inauspicious being categorized in three types as heavenly, atmospheric and earthly⁵⁰ and included earth quakes, falling of meteors and comets.

Adbhuta was a term generally used in connection with acts of deities⁵¹ and later came to be considered as a synonym for divinations.

Eclipses were rendered inauspicious in the Saṁhitās. RV.V.40. refers to a total eclipse and Atharvaveda 19.9.10 refers Rāhu. In the sense of an inauspicious event as

being contrary to the natural law, the deity Indra and sage Atri are mentioned as the ones who worked on the restoration of the sun according him the natural status.

Svapnas (Dreams) were considered lucky or unlucky and that they were indicative of future was believed in the Saṁhitās. Remedies were employed for unlucky dreams and such as transferring them to deities or praying to deities to ward off their evil effects. RV.V. 82.4.5 refer to a dream whereas RV.VIII. 47.14 refer to a bad dream. Counter measures for inauspicious dreams were often employed in the Saṁhitās.⁵²

Predictions related to weather were also forecasted by measure such as the smoke of dung.⁵³

Certain quarters of the cosmos as understood by the order of the Nakṣatras were also considered portentous, Atharvaveda mentions birth of an individual on certain Nakṣatras unlucky.⁵⁴

ii. Action of Light Forms in Tripartite Divisions

Study of the order of cosmos displayed by the bright bodies and their actions is a general tendency of early Saṁhitās. The physical order of Ṛta is chiefly brought forth by the celestial light forms especially the Sun, manifesting the path of Ṛta through the rays (RV.I.136.2), addressed as the pure face of Ṛta (RV.VI.51.16). This order or path of light (Jyotiṣpati) termed as Ṛta whose manifestation perceived in the path of heavenly bodies can be said as a *forerunner* or a *precursor* of the correlation.

Ṛta as a moral law (RV.VII.89.5, 11) or as right (RV.VIII.98.1) prevalent in early RV seems to give way to the system of Moon with the Nakṣatras mentioned in later period and with the simultaneous Pantheism considering Moon as the mind of the Kālapuruṣa (RV.X.90) systematic efforts for the development of the characteristics of the body of Nakṣatras and Moon placed in them resulting in a flourished scheme of Nakṣatras already exist in the Tai. Saṁ. (IV.4.10.1-3.).

Organizing sacrificial and other ritual actions on the divine ordinance with the sacrificial fire, Agni, is a prominent practice in this period.

The prevalence of Sūrya as the chief visible celestial light form and Agni with a natural basis as the fire element denoted in the sacrifice though with an exclusive

epithet is somewhat familiar to the early Samhitās but the development of Soma as Moon alongwith the Nakṣatras appearing with a set of deities entirely Vedic is a novel growth. Tripartite division of deities is a common trait of the Ṛgveda thereby the progress of the correlation of Jyotiṣa and Karma in the later RV and further in the Samhitās while enhancing the works of Sūrya and Agni in the celestial and terrestrial counter parts in respect with the necessity of the correlation though developed gradually, the modified character of the middle region while promoting the role of Moon is an admixture of the characteristics and actions of the chief aerial deity Indra, celestial Varuṇa and terrestrial Soma.

Indra shares affinity with human qualities or emotions than any other aerial form, also aerial forms in general are abstract and they do not possess light forms themselves but serve as the bringers of light or founders of light,⁵⁵ and are closely associated with light. Varuṇa with his physical character representing night⁵⁶ and his moral nature and the conversion of Soma into Moon, these characteristics and actions carried a suitability to Moon and consequently to the notions of mind.

Sūrya (Sun), Soma (Moon) and Agni (fire) though modified in character, due to their material nature and thereby their visibility to human senses could maintain a connection to their original forms. Also the utility of Sun and Moon as time measurers and the invoking of Agni being accessible to human efforts the triad form an important combination for the correlation.

The correlation of action of deities or the cosmic mechanism brought forth by time or natural time calculated by the motion of the heavenly bodies comes with an intellectual basis. Sun and mostly Moon do not carry much religious consequence. Even Nakṣatras are studied in relation with their characteristics connecting them to earthly counterparts so they are primarily zones carrying specific cosmic qualities. Nakṣatras are attributed with deities and formed a part of the religious system yet they themselves were least worshipped. The above instances point out a purposeful study of the cosmic pattern which is made a part of the religion and worship of the Veda. Above all, the natural connection form the substratum of the correlation in Samhitās.

iii. Journey of Man

The deities of the Veda are not only natural personifications but they also delegate the thoughts and actions of human life. Human existence as being locomotive after the death of the physical body was a strong belief in this period. Heaven and immortality being the chief ideals after physical death certain deities and phenomenon in nature also specific cosmic regions were made indicative of expressions of this ideology. The cosmic connection of the correlation of Jyotiṣa and Karma comes in this instance.

Gods originally mortals had received immortality through deities like Savitṛ (RV.IV.54.2) a form of Sun or by Soma drink (RV.IX.106.8) or Agni (RV.VI.7.4). These deities were already being transformed as the chief deities for the purpose of utility of the correlation. Actions performed in this life decided the future course or after life in the form of iṣṭāpūrta an effort to make visible the effects of actions performed form a part of the Saṁhitās.

Sacrificial actions being the basis of Saṁhitās deities as Agni were made the messenger between gods and men (RV.VII.11.1). Savitṛ a form of Sun functioned as the protector and drove away diseases. (RV.I.35.9, 11) Savitṛ transferred the soul to the abode of the righteous (RV.X.17.4), Pūṣan showed the way granting an auspicious path (RV.X.59.7.). a consideration as the soul being asked to avoid the dogs of yama and go by the auspicious path (of the fathers) also occurs in RV.X.14.10,12 and AV(18.2.12.). The path on which the deities come to the sacrifices is the path of light which in later literature is made the path on which the righteous men departed for their after life abode.

From such instances it appears that cosmos with its light forms appears to be excavated in the Saṁhitās for an idea regarding human life after death.

Along with which the correlation in the Saṁhitās vary from observations of Divinations and their countermeasures to the observations of the Tripartite divisions and the order of light. Human actions arranged on auspicious times also form a part of the correlation of Jyotiṣa and Karman.

iv. Human Actions on Auspicious Times.

Ritual actions on auspicious times was a formulated practice in the Samhitās. The concept of luckiness of days existed in early literature.⁵⁷ The connection of sacrificial post planted on an auspicious day with the prosperity of the sacrifice was already established (RV.III.8.5). A Sāvana day was used in sacrifices particularly the Somayāga (AV.VIII.9.17).

Offerings were made to gods at specific times of day. The Aświns were invoked in the morning, at noon and also during sunset (RV.V.76.3). In the Soma sacrifice Indra and Maruts secured place in the noon Soma pressing whereas Ṛbhus had a place in the evening.

Though the word *tithi* does not occur in the Samhitās the waxing and waning of the Moon was important for fixing the times of offerings and the deities were often invoked in the form of prayers and offerings, the connection of the deities as Sinīvālī and Kuhū to the phases of the Moon is a development in the later works.

Time period as Yuga was connected with the kindling of Agni (RV.III.55.18), prayers to Yuga also occur in the Tai. Saṁ.4.33.) Vājasaneyā-Samhitā (30.18) mentions offerings in the form of Puruṣa to the Yugas in the Puruṣamedha.

Certain rituals as the Mahāvratā were performed with a belief to strengthen the Sun. (Tai Saṁ. VII. 5.9) Atharvaveda (VI.40.1) refers to the oblations to the seven sages.

Along with such interactions of cosmic time with human actions the Samhitās also connect ritual actions with the system of Nakṣatras.

v. Nakṣatra and Karma

The integration of Nakṣatras with the religious system occurs in the Samhitās. Kāṭhaka Samhitā 8.1 mentions Agnyādhāna on specific Nakṣatras. The Taittirīya Samhitā. VII.4.8. mentions the time for undergoing Dīkṣa ceremony as on Full Moon in Phālgunī.

Nakṣatra for individual actions according to their characteristic was a practice⁵⁸ the astrological character of Nakṣatras as to predictions from the Nakṣatra at birth already occur in the Atharvaveda.

B. Brāhmaṇa Period

Brāhmaṇa literature chiefly dealt with the rituals related to sacrifices and their utility in terms of fruits. The importance of nature deities appears to be declined up to this period and the power of the sacrifice over the deities is seen established. Already in the RV sacrifice takes a centre position and was believed to be the navel of the world.⁵⁹ In the Brāhmaṇas, the ritual actions of man were said to control the natural powers.⁶⁰ Thereby human action inclusive of prescribed action appears superior to nature.

The explanatory part of the Brāhmaṇas being informative about myths and legends, the correlation serves as a medium for such an explanation providing a basis for the reasoning of the actions apart from which actions arranged on proper times derived from cosmic light forms remain a primary requisite of this period.

1. Ideology in the Brāhmaṇa Period

Flourished thoughts about sacrifices and the intention behind them formulate the ideology of the Brāhmaṇas. This chiefly aided to bring forth the speculative nature of these works regarding the correlation.

i. About Sacrifices

Sacrifices were believed to be connecting medium for an interaction between men and the gods, sacrificial action on specific times carried man to the world of the gods was a belief prevalent in this period.

This interaction as beyond physical or perceptive level was understood in the Brāhmaṇa period and the diversified notions of Pratyakṣa (perception) and Parokṣa (beyond sensory perception) existing in between the gods and men were explained. Pratyakṣa of human being Parokṣa for the gods and vice versa⁶¹ sensory perception became an insufficient means for appropriate knowledge of the gods which were a subject of study. The physical forms of the gods and their qualities were in consideration in the Ṛgveda yet these visible forms held an underlying reality which was the true form of the gods. Learning of the nature of this invisible truth (Satya)

beyond the visible appearances was in practice in the Brāhmaṇa period. The perceptive cosmic activity conveyed the work of the gods in this sense.

ii. *Satya equated with Actions and Time*

Ṛta as Satya established in the earlier stage, (RV.IX.113.4,X.190.1.), in the Brāhmaṇas takes an additional sense. (Śat. Brā. I.1.1.4,5 with Kauṣ. Brā. II.8). Imitating the deities continues in the Brāhmaṇas, they being true the nature of truth was constantly under consideration, which centralized in this period around the sacrifices.⁶² The forms of gods especially their immortality was a result achieved by means of sacrifices.⁶³ Satya is thus equated with sacrifice or sacrificial action and is to be achieved by accuracy of correctly performed ritual actions.⁶⁴ Varuṇa, often connected with morality in the Saṃhitās, in the Brāhmaṇas comes in connection with mistakes committed in the sacrificial process and punishes for the errors in the sacrifices.⁶⁵

Truth is connected with proper moment in the Brāhmaṇas, the deity Varuṇa is connected with evening, thus speaking truth is specially connected to evening time and inversely avoiding false utterances at this time is advised.⁶⁶ As also the connectivity of application of truth at proper moment. (Kauṣ.Brā.II.8.).The deities being aware of the intentions of the men even prior to the offerings or actual act (Śat. Brā.III.4.2.6,7.) such a thought displays the subtle interaction of this period based on moral norms. Present intentions or will became the deciding factor for after life of a man after death.⁶⁷ The idea of iṣṭāpūrta as imperishable continues in this period and its expressed in Kauṣ.Brā.VII.4. and Jai. Brā. II. 53. Along with which future life can be shaped by a man himself as a fruit of sacrifices or ritual actions conducted in present life unrestrained of divine will came to be a belief of this period. The beginnings of the later connectivity of present life to past actions lie in the above thoughts expressed in the Śat.Brā.VI.2.2.27 and Kauṣ. Brā. XXVI. 3 on which the Jātaka branch of the post Greek period is based.

iii. *Prajāpati as a form of Desire*

Prajāpati the principle deity of the Brāhmaṇas is made the creator of both the gods as well as the asuras.⁶⁸ Thus he possesses two sides to his nature, one of truth

and light and the other side of untruth and darkness.⁶⁹ Prajāpati is equated with sacrifice⁷⁰ which is made a device of worship for the gods for obtainment of their desires.⁷¹ Prajāpati as a representation of desire, the ideology of the Brāhmaṇas connect the abstract form of ‘desire’ to the visible anthropomorphic form of desire represented by Prajāpati. Desire leading to sat or manifested world of activity is already expressed in Nāsadiyasūkta (RV.X.129.) extending in the Brāhmaṇas for an actual representation, also implicating creation from desire. Prajāpati is said to be mortal at first (Śat.Brā10.1.3.1.). He is also the foremost sacrificer (Śat, Brā.6.2.3.1.) he sacrificed himself (Pañ. Brā.VII.2.1.) and also reached the Sun as a reward (Śat.Brā. X.2.2.1.) Prajāpati made visible in the form of a Saṁvatsara and sacrificial actions arranged on his body parts, represents a stage when cosmic actions in an organized way were followed by human, more actively the physical ones as Prajāpati is seemingly dormant as a moral ruler, sacrificial actions a means for removal of sin or accumulation of merit.

iv. Release from Punarmṛtyu

Release from the bonds of Punarmṛtyu (repeated deaths) also is a thought pondered in this period. (Tai. Brā.III.11.8), Immortality by transcending death being the solution for an ultimate future, efforts to avoid the repetitions of death⁷² by the aid of sacrifices was a settled idea. The gods received immortality on proper performance of Agnicayana non-performance of which led to the series of deaths was a belief prevalent in the culture in this period.⁷³ The thought advanced to connect the timed form of Prajāpati to ritual actions to acquire immortality.

2. Jyotiḥśāstra in the Brāhmaṇa Period

i. Divisions of Time

Time being considered as one of the important factor in the correctness of sacrifices, the development of Jyotiṣa occurs in this sense. The Śāt. Brā.I.7.3.3 mentions Time as ‘proper time’. Prajāpati, the deity equated with Saṁvatsara in the Brāhmaṇas during creation said to arose out of a golden egg which swam about an year (Śat.Brā.XI.1.61.).

The term Varṣa occurs in Śat Brā. (2.2.3) and in the Brāhmaṇas is calculated of 360 days or 720 days and nights together.⁷⁴

The Brāhmaṇas name months with Nakṣatras. Earlier in Tai.Saṁ. the names of months occur as Madhu, Mādhava and such being twelve distributed amongst six seasons.⁷⁵ A thirteenth month is also referred.⁷⁶

The seasons vary in number in the Brāhmaṇas.⁷⁷ The Tai Brā. (I.1.2.6.) places Vasanta as the first of seasons. An important feature of the Brāhmaṇas in relation with seasons is that they label Vasanta, Grīṣma and Varṣā together as the Ṛtus for the gods.⁷⁸

Ayana as Sun's passage in the Northern and Southern hemisphere for six months each is recognised as being in the gods and fathers.⁷⁹ The Sun stands still is also an observation in the Kauṣ. Brā. 19.3.

Brāhmaṇas record months ending with Full Moon and addressed from Nakṣatras.⁸⁰ The bright half of the month is said to be the time for the gods.⁸¹

Amongst the phases of Moon, the New Moon and the Full Moon receive proper names⁸² which occur as names of deities in the Saṁhitās.⁸³ The term Amāvāsyā finds an explanation in the Śatapatha Brāhmaṇa (I. 6.4.5.) where Moon is expressed as the food of the gods and is also said as entering the water and the herbs whereas the Aitareya Brāhmaṇa (40.5) mentions the Moon entering the Sun on Amāvāsyā. The word *tithi* finds mention in the Brāhmaṇas⁸⁴ in connection with a specific rite associated with a particular tithi. Also the division of day in three parts and five parts are mentioned.⁸⁵ Muhūrta as small divisions of the day occur in the Brāhmaṇas.⁸⁶ A day named Viśuva or Viṣuwat placed in the middle of the sacrificial year is found out in the Brāhmaṇas when the days and nights are of equal length.⁸⁷

Divisions of time thereby occur in the sense of specific time for performance of rituals.

ii. Divinations

The Brāhmaṇas connect Viṣuwat with countermeasures for eclipses.⁸⁸ Darkness continue to be condemned, effort for restoration of light of the Sun is

mentioned in Pañ. Brā.VI.6.8. Purity is associated with ordeals related to fire. (Pañ. Brā.XIV.6.8, Jai.Brā.111.233f, Śāt.Brā.I.9.3.2.)

Dream state was connected with the soul wandering with free will (Śāt.Brā.XIV.7.1.12), the existence of the fathers was dream like (Śāt.Brā.XII.9.2.2).

iii. Luminaries

Sūrya as a celestial body is well recognized in the Brāhmaṇa literature. Sun as the cause of seasons, winds, planets and existence is mentioned in the Aitareya Brāhmaṇa (2.7).the rise and set of Sun as a mere appearance and the explanation behind the process is provided in the Aitareya Brāhmaṇa (111.41)

Moon on the physical side is connected with rain (Ait.Brā.VIII.28.15.), with the tides and especially with the plant life,⁸⁹ whereas mystically as Soma is connected with the fathers.⁹⁰ The crater on the Moon as a dark part on the Moon is observed⁹¹ and the hare shape is recognized with Yama in the Jaiminīya Brāhmaṇa (1.2.8).

iv. Nakṣatras

A fully developed Nakṣatra system appears in the Brāhmaṇas. The Nakṣatras begin with Kṛttikā with an explanation provided for Kṛttikā as the beginning point.⁹² Tai. Brā.2.7.18.3 provides their derivation. They appear with their deities (Tai. Brā. 3.1.4.5) and number of stars.(Tai.Brā.1.5.). The method to mark Nakṣatras was known in this period and were involved with the religious rites. Nakṣatras were divided as puṇya and pāpa (Tai. Brā. I. 5.2, III. 1.2.8). A division of Nakṣatras as Deva Nakṣatras and Yama Nakṣatras also appear (Tai. Brā. 3.1).

v. Deities

Prajāpati

Prajāpati is the prime deity of the Brāhmaṇas. The creator god, Viśwakarma of RV (X.81, 82.) is associated with Prajāpati in the Śāt.Brā.8.2.1.10.and Ait Brā. 4.22. Prajāpati also sucks in the metaphysical nature of Varuṇa and is made the king of the gods, Varuṇa is equated with Prajāpati as he possessed the form (rūpa) of Prajāpati.⁹³ The association of the heavenly light forms Āditya, Cāndramas and also Agni with Prajāpati often occurs in the Brāhmaṇas.⁹⁴ More importantly he is the cosmic form of desire made physical to connect with ritual actions.

Prajāpati is also given a physical basis with the aid of the Nakṣatras. Nakṣatras associated with the body parts of Prajāpati appear in the Tai. Brā.⁹⁵

Prajāpati is also made representation of Time and its divisions in the Brāhmaṇas. Saṁvatsara (year) is identified with Prajāpati (Śat.Brā.1.6.3.), Amāvāsyā, Paurṇamāsī and the joining points of day and nights also the beginnings of the seasons are made the joints of Prajāpati (Saṁvatsara).⁹⁶

Agni

Agni is equally important in the Brāhmaṇas as representation of the sacrificial fire. Atharvaveda (1.1.8.) mentions Agni as ruling the sacrifice. In addition the Śatapatha Brāhmaṇa X.4.3.9 identifies Agni altar with rituals or holy works as well as knowledge (Vidyā). In the Ṛgveda (VII.93.7, IV.10.7,12.4) he is invoked to pardon sins, addressed as 'Jātaveda', (RV.6.15.13) explain him as the knower of all generations, in the Brāhmaṇas, he frees oneself from the guilt of one's parents. (Tai. Brā.3.7.12.3-4). Tai Brā.2.4.1.6 projects Agni as the path which leads to the gods through which one may reach heaven. In the rituals the Southern Agni represents the region of the fathers, it also carries a cosmic significance of the position of the Sun at the winter solstice about to die indicating an end of a specific activity.(Śat. Brā. IV. 6.6.1.)

Apart from the above chief deities specifically connected with ritual actions mention of Bṛhaspati appear in the Tai Brā.3.1.1.5. in connection with the Nakṣatra Tīṣya which in later literature appears as the Planet Jupiter though in the Brāhmaṇas its specification as a Planet is obscure.

3. Karma in the Brāhmaṇa Period

i. As Sacrifice

Nature of Karma in the Brāhmaṇas is chiefly in the form of sacrifices.⁹⁷ Sacrifice is termed as the greatest of Karmas.⁹⁸ There are prayers for happiness, prosperity and good fortune.⁹⁹ A man was believed to shape up his future¹⁰⁰ with the aid of ritual works especially sacrifices. Ritual actions for long life and joys of the

heaven continued in the Brāhmaṇas. Sacred works also made attainable immortality.¹⁰¹

The fate of man after death depended on his deeds. A sort of ordeal by means of judging his good and evil deed decided the future cosmos of man (Śat. Brā. XI.2.7.33.). the act of Agnihotra was said to save from an evil-fate. (Jai. Brā.1.42-44.). The performance of Agnihotra served as a boat to heaven (Śat.Brā.II.3.3.15.).

Whereas in the Saṁhitās sacrifices served as a means of an expression of devotion for the deities, the offerings made to appear them or to win their favours for desire fulfillment, in the Brāhmaṇas the sacrificial altar takes a central position the sacrificial act a magical technique for the production of the desired results.

Yet cosmic actions continue as a fundamental concept in the sacrifice, though deities have become subordinate in this period. The symbolic significance between act of sacrifice and natural event continued and often sacrifices copied the several aspects of nature.

ii. As Order

Karma also occurs as order in the Brāhmaṇas. The order in the sacrifice is in communion with the order or action in nature, the commencement and the renewal of sacrifices with aid of Prajāpati equated with Samvatsara. The correctness and superiority in the performance of sacrifice were equally rendered important for which knowledge of sacrifice was essential to fulfill the aim of sacrifices.(Tai.Brā.II.1.1.1.)

Removal of sin was also one of the intentions behind sacrifices. Śat. Brā.II. 5.2.25 proclaims the performance of Yajña for counteracting sins. Ritual error is also considered a type of sin during rectification. Thus, removal of sin was by ritual practices as any evil act borne punishment (Śat.Brā.XII.9.1.1).

Karma in the form of Śānti rites to appease the angry deities (Ait.Brā.3.2.) also occur in the Brāhmaṇas.

iii. As Vidyā

Karma is sacrifice and appears distinguished from Vidyā (knowledge) in Śat. Brā.X.4.3.4-10. The term knowledge pertains to the exactness in sacrifices which appears as Satya or the prior Ṛta and also as Tapas.

4. Correlation in the Brāhmaṇa Period

i. Practice of Rituals

The practice of rituals is an obligation in the Brāhmaṇas. It carries the sense of Vrata.¹⁰² Vrata necessitated natural and moral order which equated with the correct order of sacrifices in the Brāhmaṇas. The correlation chiefly comes in sense of connection of proper time and sacrifices. Present sacrificial or ritual actions resulted in future rewards extending to after life was also an aspect of the correlation. Long life was considered necessary for performance of rituals, the more the offerings made in present life, longer would be the stay in next world (Śat.Brā.X.1.5.4)

Brāhmaṇas explain the connection of the rite with the heavenly body or else the time and its reward. The insertion of Pravargya rite after a Soma sacrifice, which unites the gods with a new body for the sacrificer,¹⁰³ or Darśapūrṇamāseṣṭi performed by the gods to compel the Asuras to give up the half month of the waning Moon¹⁰⁴ are instances of the explanatory nature of Brāhmaṇas in connection with the correlation. Ritual actions performed for rectifying the parvans of Prajāpati is also a chief illustration. Sacrifices mainly depended on the phases of Moon¹⁰⁵, the Adhimāsa¹⁰⁶ is connected with Śunāsīrīya sacrifice.¹⁰⁷ Deities are affiliated to years¹⁰⁸ and are associated with the Cāturmāsya. Certain seasons were deemed proper for Agnyādhāna. Śukra finds mention in connection with Agniṣṭoma.¹⁰⁹ Occasionally a deity finds mention in connection with a certain offering in a rite made at a certain time. (Śat. Brā.1.7.3.3.). Vasanta already declared as the first of the seasons (Tai. Brā.1.1.2.6.) is appropriated for the consecration of the sacred fires for a specific caste.(Śat.Brā.II.1.3.1-5.).

ii. Nakṣatra and Ritual Actions

Nakṣatra in the Brāhmaṇas are of ritualistic significance. Several rites and sacrifices were performed on particular Nakṣatra, Yoga or specific time.¹¹⁰ Nakṣatra were chiefly connected with rites as Agnyādhāna (Śat.Brā.II.1.2.),¹¹¹ with negations on certain Nakṣatra (Tai.Brā.1.1.2.8.).¹¹² Nakṣatras were connected with actions for fulfillment of certain desires.¹¹³ Certain individual acts were prescribed on specific Nakṣatras.¹¹⁴ Also birth on a specific Nakṣatra for instance Mūla was considered

favourable (Tai.Brā.3.1.2.).¹¹⁵Tai. Brā III.1.refers to a Nakṣatreṣṭi concerned with offerings to Nakṣatras and their deities.¹¹⁶

iii. *Mythological Connection of Nakṣatras and Actions*

The mythological character of the Brāhmaṇas associate Nakṣatras with actions performed on them in the past. Thereby Punarvasu is the Nakṣatra on which gods performed sacrifice for re-establishment (Tai. Brā.1.1.2), or Jyeṣṭhā on which the demon Jyeṣṭha was killed (Tai. Brā. 1.5.2). Also the Nakṣatras Rohiṇī and Mṛga are referred with Prajāpati depicting a star picture.¹¹⁷ A myth of Soma carried by an eagle (Ait. Brā.3.25) is also detailed in the Brāhmaṇas

iv. *Prajāpati equated with Yajña*

The construction of the form of Prajāpati as a representation of the cosmos and arrangement of sacrificial actions on various time divisions displayed as the body parts of the cosmic Prajāpati is the prime aspect of the correlation in the Brāhmaṇas, Prajāpati equates with cosmic time and order brought forth by the heavenly light bodies and through the medium of sacrifice he has a centralized form of the desires and immortality.¹¹⁸

On the ordered 'timed form' of Prajāpati comes the order of sacrifices. Prajāpati is identified with Saṁvatsara (year).¹¹⁹ Sacrificial actions are arranged on the parvans of Prajāpati, Agnihotra on the two joints of Ahorātra, Paurṇimāsesti and Darśeṣṭi on Paurṇamāsi and Amāvāsyā and Cāturmāsyajña on the Ṛtusandhis (Śat. Brā.1.6.3). Actions are also arranged on the joints of the five divisions of the day.¹²⁰ Sacrificial actions on the divisions of time are said to rearrange or rectify the parvans of Prājāpati, working on the idea of the exhaustion of Prājāpati on creation and his renewal by sacrifices. The renewal or reconstruction of Prājāpati is brought about in a ritual form in the shape of a fire altar equating Prājāpati with the sacrifice.

v. *Yajña and the relation of Time*

Sacrifices being arranged on the order of times, the Brāhmaṇas establish a relation between ordered sacrificial activity and the motion of time. The importance of action is already established in the Brāhmaṇas in the form of ritual actions where they show an inevitable connection with specific time. The effect of sacrifices

performed in present are obtained at some distant point of future. Śat. Brā.X. 4.4.9 mentions the effect to be obtained in next life after separation from the present body. This indicates that ritual action worked on its own simultaneously time becomes a witness to connect the present act with the future result. Also present ritual work with passage of time results in future making of man on the quality of his action¹²¹ which is made prime, time being a secondary function.

vi. Sacrifices and the course of Nature

Sacrifices were considered all in all, being equated to a magical technique to produce results also they were regarded as the one's able to change the course of nature. For instance, the fire sacrifice in the morning was connected with the rising of Sun (Śat. Brā.II.3.1.5.). The fathers, by their hymns, gave rise to the dawn is an early idea being pursued later. The Aitareya Brāhmaṇa¹²² mentions Ekaviṁśāha performed on the Viṣuvat the day in the mid of the sacrificial session. (Tāṇḍya Brāhmaṇa 13.4.16.) by the aid of which the gods raised Āditya to the heaven. Divākirtya sāma sung on the Viṣuvat was also said to remove the darkness caused by Svarbhānu (Tāṇḍya Brā. hmana).¹²³ The performance of Agnihotra prior to Sunrise and after Sunset retained the good deeds in the next world and helped avoidance of rebirth. (Śat. Brā. II.3.3.8-12). Sacrifices were believed to change the course of natural events on their performance though the knowledge about days and nights (Ahorātra) was supposed to make a person sinless.¹²⁴

vii. Divinations and Actions

Śānti rites for certain happenings occur in the Brāhmaṇas. Dreams were delivered to Trita Āptya (Śat. Brā.1.2.32,3.). The use of Apāmārga plant to wipe away bad dreams is also suggested in Śat. Brā. XIII.8.4.4. Countermeasures for dreams also find mention in the Samvidhāna Brāhmaṇa 1.8.7-8.

C. Upaniṣad Period

The speculations of the Upaniṣads aim at a more consistent approach between man and cosmos. In the Brāhmaṇas, sacrifices were the vehicles to create and renew the cosmos with the reconstruction of Prajāpati whereas in the Upaniṣads sacrifices

though still considered for ritual actions yet were not all in all. Also Prajāpati developed into the cosmic principle, Brahman. The nature of Karma, prior ritual turned to moral. Future of man came to be considered as an outcome of his moral deeds for which the individual soul (Jīva) faced rebirth. Transcending the seed of Karma and achieving the unity of Brahman and Ātman constitute the prime subjects of the Upaniṣads.

1. Ideology in the Upaniṣad Period

i. Tendency to Abstraction

The Upaniṣads show a tendency to abstraction, the search for Satya in this period led to the abstract principle Brahman.¹²⁵ Satya is equated with righteousness (dharma)¹²⁶ which secures the highest place in the Upaniṣads. Earlier the cosmic order, Ṛta receded in the back ground with Satya taking its place. In RV. (X.90.16.) sacrifice becomes the foremost of Dharma and with an advancement in this terminology in the Brāhmaṇas, Satya pertains to ritual accuracy or correctness in the sacrifices. Till the Upaniṣads were Satya became uniform with Dharma, Dharma was already believed as the support and was established in this sense in the culture.

ii. Brahman the Highest Truth

The unified principle for Satya or Dharma is Brahman. The highest truth in this period pertains to Brahman as an absolute principle,¹²⁷ in which the expressions for the prayers to lead to the way to truth, light and immortality centralized.¹²⁸

Brahman is also the original principle from which the bhūtas spring up thereby they come into being, sustain and come to an end.¹²⁹ Though the bhūtas appear in various names and forms Brahman, the principle behind them is expressed as to be in a concealed or disguised form, as a Satya, the reality hidden behind the reality of names and forms and as the real cause behind the reality.¹³⁰ Brahman entering the material world of names and forms and existing as an individual entity, the Jivātman, appearing as in contrast to Brahman or aptly the supreme Ātman¹³¹ is one of the basic conception in the formulation of the ideology of the Upaniṣads. Brahman as the foremost principle comprehended in the universe¹³² as the object to be known and

individual Ātman as the innermost self of man believed as the subject or the knower, their synonymity¹³³ creating an eligibility of knowing one if the nature of other is known in this period.

iii. Material Brahman

Also through the means of material Brahman, the knower Ātman was made understood, the nature of the real Brahman or Ātman as that which simultaneously and non-differently exists in the universe as well as the individual. In an individual, the Ātman exists as the innermost one being veiled from its universal counterpart due to the form of man analyzed to be made up of five kośas (Tai.Up. 2.1-6) is also a thought. Ultimately through the idea of the unity of the Brahman and the Ātman the philosophy of the Upaniṣads reached to a point of stabilization of the principle element with its counterpart.

iv. Rebirth (Punarjanma)

The other face of the Upaniṣads exhibit the idea of rebirth (Punarjanma). The disconnected Ātman along with its form separated from the ultimate principle goes through the rounds of repeated births and deaths by the force of his actions. This link of actions to the phenomenon of Punarjanma is chiefly connected to the notion of accumulated merit or demerit the present birth being a fruit effect or result of actions of some distant past life.¹³⁴ Good and evil birth is thereby made the fruit of good and evil actions (Maitrāyaṇī Upaniṣad III.1). Act being consequential for the performer (Śvetā. Up. V.7.) actions in present life design or else regulate the future existences of man was a belief.¹³⁵

The concept held dual perspectives to view the present birth, one being surfaced as a sort of a fruit of past actions simultaneously the other as a vehicle to future existences on the basis of present deeds. The Upaniṣads pioneered the later struggle between fate and free will on the above basis.

v. Freedom from Actions

Ripening of Karma (Karmavipāka) of an individual manifested as present birth also connected the terms Puṇya and Pāpa with previous actions¹³⁶ Desire as the one leading to activity inclusive of birth and death desirelessness became a ultimate

device to overcome rebirth (Muṇḍ. Up.III.ii.1). Being free from actions (rather than to remain in the cycle of existence through good and evil actions) made one immortal and united one with the Supreme principle. Therefore achievement of Brahman was the ultimate way of thought recognized in the Upaniṣads.¹³⁷

2. Jyotiḥśāstra in the Upaniṣad Period

i. *Nakṣatras*

Nakṣatravidyā as a branch of study is already established in the period of the Upaniṣads.¹³⁸ The classification of Nakṣatra as Puṇya (auspicious) and Pāpa (inauspicious), also male and female exists in the Upaniṣads.¹³⁹ *Aparāvidyā* The identify of Jyotiṣa as one amongst the *aparāvidyās* is an important development of this period.¹⁴⁰ Upaniṣads aimed for higher knowledge and as the Vedic study advanced for the understanding of the nature of Ātman¹⁴¹ supreme as well as individual, the probe for its immutable form (Parābrahman) was the foremost as one leading to emancipation and thereby a topic of persuasion.

ii. *Symbolic and Phenomenal Brahman*

Brahman as all pervasive¹⁴² and being veiled by reality (empirical) is made apprehensible through various symbols. Brahman is addressed as the Sun of the universe.¹⁴³ The fire element is one of the innumerable aspects through which Brahman is made understandable¹⁴⁴

Apart from being merely symbolic the conception extends to project Brahman in a phenomenal form expressed as the one under whose control the luminaries as well as the Time divisions as seasons, years and such stood apart.¹⁴⁵ Amongst the material and the immaterial forms of Brahman, its essence is made known in the physical nature as the Sun and in the human body the eye with respect to its material form whereas in case of its immaterial form its essence is expressed as the Puruṣa in the Sun and the eye this being an illustration in the Bṛ. Up. which blends symbolism with reality.¹⁴⁶

In an effort to explain the unity of the Brahman and the Ātman, the identification of the bodily warmth of the man as the Ātman as also Brahman as the

light in the cosmos is actively expressed. (Bṛ.Up.IV.3.1,Chān.Up.3.13.8.)
Muṇḍ.Up.3.1.5.)

The cosmogonism of the Upaniṣads make mind in the human and the Moon (amongst the gods) the supports through which the sacrificer reaches heaven. (Bṛ. Up.III.1.6.) whereas the Sun is an expression of the luminosity of the mind (Bṛ.Up.I.5.12.) the Moon has a vital role as the luminous organ of the vital force which extends infinitely.¹⁴⁷ The study of the cosmic form in terms of Prajāpati structured as of fifteen digits and a sixteen constant one through which he permeates the entire living world (Bṛ. Up. I.5.14) is perhaps an extension beyond symbolism. Also the connection of Moon with the pitṛs is an accepted dogma in the Upaniṣads (Kauṣ.Up. 1.2, 2.8.). Certain other astronomical conception as the eclipse of the Moon and later his becoming free from the jaws of Rāhu is a simile to the state of the Jivātman prior and later to acquiring true knowledge.

iii. Dream State

A probe on dreams in the Upaniṣads make dream state a state of the Ātman (Bṛ. Up.IV.3.4,5.13.). The Ait. Up.I.3.12. considers the waking state as a dream. The Chān. Up.VIII.7-12, explains the dream state as a condition in which the existence is in a self created world it also contrasts the dreamless sleep where the self enters fullest light. Bṛ. Up.(II.1.18.) explains dream state as a kind of perception. It is a subject of Jyotiṣa on account of its quality for perception and is connected as a resultant of past actions.

iv. Nature of Kāla

Kāla continues in the Upaniṣads as ‘time in general’¹⁴⁸ and also as ‘proper time’¹⁴⁹ for performance of auspicious actions as in Samhitās and Brāhmaṇas.

Kāla as ‘appointed time’ in relation with death of a person occurs in the Upaniṣads.¹⁵⁰ Prior to the Upaniṣads, Kāla comes in connection either with a deity or with a rite¹⁵¹ whereas in the Upaniṣads it is associated with human being. Kāla is equated with finish or end (Chān. Up.II.13.1.).

Already Kāla is the first principle or the creator of beings in the Atharvaveda,¹⁵²the idea extends in the Upaniṣads expressing Kāla as the source or

cause of creation. The Śvetāśvatara Upaniṣad¹⁵³ mention Kāla amongst one of the factors responsible for the creation and sustenance of beings.

As an efficient cause

Kāla is projected as an efficient cause for a certain happening or event. With the agency of Kāla is projected the transformation of the seed, the cause of origin of Virāj into an year or Prajāpati.¹⁵⁴

v. Divisions of Time

The subject-matter of Upaniṣads project Kāla as an efficient cause of beings. In an effort to establish the principle existing behind the entire universe certain projections as the origin of Kāla itself by one who is intelligent and omniscient as well¹⁵⁵ appear which tend to extend the conception of god or Omkāra¹⁵⁶ beyond the three times. As a unit of measurement, Kāla exists in the Upaniṣads as minute divisions and also in the form of long time periods. The winking of the eye, a product of the supreme being who is brilliant as an illustration of the minute divisions of Time expressed as Nimeṣa occur prior in the Vājasaneyā-Saṁhitā and is a repetition in the Upaniṣads.¹⁵⁷ The term Pakṣa also occur in the Chāndogya-Upaniṣad IV. 15.5 and Bṛhadāraṇyaka-Upaniṣad III. 1.5.

The combining of the concept of finite Brahman and the idea of recurrent creation and destruction of the universe operated by long time periods as Kalpa, Yuga, Mahāyuga seemingly lies in the Upaniṣads which later formulated in a theory in the Purāṇas and the later Philosophy of the literature.¹⁵⁸

As of Kāla without parts the formless nature of time is made more nearer or almost equivalent to the ultimate Brahman. Time as a formation of parts as past, present and future is inferior to Brahman. (Śvetāśvatara Upaniṣad VI.5.6.) The rise and merging of Sun in Kāla (with parts) is known priorly (Atharvaveda 19.54.1) and in the Upaniṣads the idea advances to place the impartite time as prior to the rising of the Sun.¹⁵⁹ Bṛhadāraṇyaka Upaniṣad III. 8.9 explain Kāla as derived from Brahman, the formed part of Kāla rotate below Brahman (Bṛ. Up.IV.4.16.). The qualitative world is an attribute of time with parts and Brahman is declared as the lord of all that

has been and will be (Bṛ. Up.IV.4.15). Such ideas extend the conception of Kāla in connection with Brahman.

3. Karma in the Upaniṣad Period

i. Ṛta and Sacrifices

The earlier concept of Karma as Ṛta prevalent in the Ṛgveda continue in the Upaniṣads. Karma in the sense of Ṛta is referred to in the Kathopaniṣad 1.3.1. and Maitrī Upaniṣad 2.6.6.

Sacrifices exist in the Upaniṣads. The reward of sacrificial performance was securing a place in the world of the fathers (Bṛ. Up.I.5.16.). Sacrificial offerings amongst other rituals were considered as a *sukṛta*, a meritorious act which made achievable the Brahmaloka.¹⁶⁰ Sacrificial fire is still supposed to put an end to evil action.¹⁶¹ Such connections of ritual actions with morality is one of the remarkable feature of the Upaniṣads.

Yet apart from sacrifices being valued¹⁶² in this phase a confined utility of sacrifices as rotation in the cycle of rebirths is expressed.¹⁶³ With such an allocation, sacrifices are only a bridge to Brahman.¹⁶⁴

ii. Karma as Cosmic Activity

The process of conversion of initially undifferentiated universe into a differentiated one into names and forms resulting from Brahman as the cause of creation as well as destruction is the nature of the cosmic activity in the Upaniṣads.¹⁶⁵

Also such references as the structure of the universe evolved from the Ātman, by the process of unfolding (Sat) (Tai.Up.II.6,7.) or Ātman attributed the creation of elements (Tai.Up.II.1.) also occur. Bṛ.Up.(II.1.20.) explain the process of creation comparing fire and sparks springing forth from it to the Ātman and thereby the emerging forth of cosmic activity.

The cosmic activity as connected with Brahman and Ātman the interaction of man with cosmos became cosmogonist where ritual actions turned into allegoric acts explaining acts as Aśwamedha gained through the realization of parts of the sacrifice and the universe.¹⁶⁶

The material or 'external' form of sacrifice was substituted by 'internal' sacrifice for instance the ritual of Agnihotra to such extent is converted into Prāṇāgnihotram. (Br.Up.I.5.23, Chān.Up.5.19.24).

iii. Moral Aspect of Karman

The chief nature of Karma in Upaniṣads is moral. They transform ritual Karma into ethically retributive Karma. Whereas the concept of *sukṛta* and *duṣkṛta* existed in the Samhitās, which later was mainly confined to the correctness or errors in the sacrifices in the Brāhmaṇas, Karma in the Upaniṣads explain the becoming of man according to his deeds, distinguishing between good and sinful acts. Man possessed will (Chān.Up.III.2.13.), his behaviour either good or bad transformed him accordingly,¹⁶⁷ depending upon his desires and actions.

Karma as a retributive force became the cause of happiness and suffering. Earlier this idea is expressed in the Tai. Brā.III.11.1. showing the fate of actions while Śvetāṣvatara Upaniṣad V.7 extends the importance of conduct explaining the consequence of actions acquired by the doer in accordance with their nature.

iv. Karma as Daiva

Karma being causal in nature, every action is connected by a causal link to some previous action. Simultaneously, the nature of present action determinative of the future discourse the concept of Karma provide a consequential chain to the established order of things.

The retributive force of Karman connects transmigration to the theory. With *puṇya* and *pāpa* appearing in a clearly ethical sense in the Upaniṣads and rebirth as a consequence of willful acts performed in some remote past, manifesting in the form of sufferings and happiness thereby reflecting an inequality¹⁶⁸ in present birth amongst human forms constitute the angle of Daiva in the Upaniṣads. Daiva carries the sense of divine will thereby the fruits to be received are from the gods and occur with the passage of Time. These factors carried a relevancy with the rebirths of the soul.

v. Karma as Vidyā

Apart from actions resulting from desire and will of man, the inclination of Upaniṣadic thought to project Karma as Vidya (Knowledge) is generally prevalent.

Also the nature of Brahman Ātman in the sense of non-action as being contradictory to action, Karma as Knowledge is a means to understand the Ultimate Principle. In this sense Br. Up. distinguish Karma as ritual actions and Vidyā as well.¹⁶⁹ In a somewhat similar sense, the *Kena Upaniṣad* IV. 8. expresses Brahman as resting upon austerities, self control and Karma (as work or action).

The concept of relative ethics in the sense of knowledge of good and evil and action arranged accordingly for the achievement of release is one way of thought in this period whereas embodied life and present birth amongst the cycle of rebirths itself being considered evil, bringing an end to embodiment and to achieve deliverance, form another way of thought in the sense of absolute ethics. The knower of Brahman, being free from good and evil,¹⁷⁰ or the world of Brahman being without evil.¹⁷¹ chastity in thoughts and deeds appears to be the prime requisite of this period.

Desire being the seed behind the above traits, also it being considered as a fetter and not action (proper) itself, the knowledge, that rebirth results from desires and ignorance being acquired, transcending the human seed with the aid of desirelessness and acquiring of true knowledge is a suggested solution.¹⁷²

4. Correlation in the Upaniṣad Period

i. As expressions of Brahman or Supreme Ātman

Ātman understood as the only reality, the Upaniṣads convey that by understanding Ātman through hearing, reflecting and meditating upon all is known.¹⁷³ This being the sole idea of the knowledge of the Ātman all empirical studies which were than known came to be declared insufficient for the complete knowledge of the reality with the belief that man remained in darkness through empirical knowledge which carried a realm of ignorance (avidyā).¹⁷⁴

Supreme Ātman is declared as within all (Br.Up.III.4.1.), Its counterpart the Jivātman being bound yet is a distinct entity, since a separated part of the supreme whole. It is unknowable as being imperceptible to normal senses as also is unknowable since itself being the knower. Rather Ātman (self) plays the role of the

subject or the knowing one and cosmic Brahman in the sense of visible expressions of the Supreme Ātman is made the object of the study.

Ātman or Brahman itself as a supreme principle is unknowable yet its expressions in the manifested world are made the source of information for the knowledge of the Ultimate. Since a vision of an object gives the knowledge of the object as well as one who visualizes the object similarly the expressions in the sensual world are made a means to understand that which is the cause behind the manifestation. It is in this sense that the correlation occurs in the Upaniṣads providing knowledge about Ātman through the activity of the perceptive light forms and their order. Such an activity as being present inside one as well as in the outer world and being controlled by one's own immortal self¹⁷⁵ appears as an indication through the correlation, such an expression becoming a necessity being one of the fundamentals of the Upaniṣads.

Brahman, as a cosmic principle regulating the entire activity of the material world and Ātman as the psychical principle embodied in a being is also an expression. In this sense, the Sun is expressed as the eye of the all pervading entity,¹⁷⁶ its apprehension through symbols expressing the cosmic form whereas the dream state as one of the states of the Ātman is the expression of the psychical form.

ii. Worship of Symbolic Forms

In a similar sense, along with other objects as symbolical of Ātman, Sun is worshipped as Ātman, though only as an expression of the imperceptible principle existing within and outside the body. Worship in this sense occurs in the Upaniṣads with Sun as the symbol of the element within, as the first born, representing the phenomenal form of the Original Creative Principle which is declared as the Sun of the universe.¹⁷⁷

Worship in such a form produced results as deliverance from sin. Kauṣītakī Upaniṣad (2.7) mentions the worship of Sun at its rising, mid-day and setting positions to such an effect. Certain rituals connected with Nakṣatras and favourable days also occur (Bṛ. Up. VI. 3.1).

The concept of auspicious times for, religious rites to be performed for fulfillment of desires continue in the Upaniṣads. Kāla is a representation of Brahman in the Upaniṣads thereby is an object of worship. Sinīvālī is believed to implant embryo and is revered.¹⁷⁸

iii. Activity of Brahman through the Agency of Kāla

Time is an expression of Brahman and is said to operate in the world of names, forms and activity thereby 'Time' serves as an agency from which the beings flow, grow and disappear.¹⁷⁹ Time is said to cause change in the universe counted through the digits of Prajāpati (as Time) thereby has an extension beyond the symbolic form.

According to Time a visible as well as an invisible form in relation with the timed and timeless parts of Brahman, with Sun as its bifurcating medium is mentioned in the Upaniṣads. Thereby Kāla appears as a principle operating beyond perception of which Kāla (physical) viewed by Sun through year and its other parts as its manifested form is only a section of Kāla projected from its hidden part prior to the Sun which indicate the subtle activity of Brahman is an advancement in the Upaniṣads in an effort to explain the all pervading Original Principle and its perception and activity by means of Kāla.

Sun as the source of the relation between Time and Brahman, also displays the connection between the Supreme Ātman and the individual one. Puruṣa in a hidden form dwelling in the material Sun through the rays of the Sun is connected to the Puruṣa in the eye.¹⁸⁰ Such a functioning is also a reflection in the doctrine of Pañcāgnividyā¹⁸¹ and also the functioning of the Cosmic and the Psychic Principle in the Kauṣītakī Upaniṣad ii.12,13.

iv. Cosmic Stations of the Jivātman

The Upaniṣads express the ethical substratum (karmāśraya)¹⁸² composed of the impressions of actions of past, lives being the cause of the repeated births, the Jivātman travels through the various courses of life constituting destinies. The cosmic objects serve as markers to these destinies.

In the repeated rising and setting of the Sun and the Moon, the appearance and disappearance of the Embodied Soul was inferred. The ultimate end of journey of man in the Upaniṣads, which was the abode of Brahman was declared to be beyond actions goods or evil and also beyond the contrast of day and night.¹⁸³

Most of the Upaniṣads mention the ascend and descend of the Jīva on the paths opening according to the variety of actions performed by the individual.¹⁸⁴ The two sections of the year (Prajāpati) were utilized for performing two different sorts of actions promising two different destinies in the future.¹⁸⁵ The statements of the Upaniṣads expressing the transformations of man according to the conduct¹⁸⁶ were distinctly made visible inclusive of the afterlife of man in the concept of the two paths.¹⁸⁷

Moon appears as a resort to all the Souls on the way of transmigration its waxing and waning connected with the arrival and departure of the Souls¹⁸⁸

On account of the deeds and the knowledge, the Soul either takes rebirth in various *lokas* or being free from the circuit of transmigration on account of knowledge ultimately reaches the world of Brahman.

v. Remains of Work and Divinations

Actions of man remain in a seed form, fructifying in future in form of rebirths came to be a notion, strengthened in this period. Though, the insistence on outer cosmic sources as means to indicate future is lessened in the Upaniṣads. Prior to which, traits of such instances occur in the Āraṇyaka literature, though in the Upaniṣads the mechanism of dreams is excavated to this effect, as a source of reliance on future and chiefly to decipher the past works of man which became a regularized concept in the later period.

Chāndogya Upaniṣad connects the success of a rite performed with some desire to a certain dream.¹⁸⁹ Whereas Br. Up. relate the objects in dreams as the impressions of the past experiences¹⁹⁰ thereby dream state is a kind of perception expressed as the activity of the intellect visualized in the light of the self, the substratum being in the human itself. Present birth believed as an outcome of previous actions, became an indicatory mark of desires of past and the probable future in this

period which formed the base of the later developed *horā* branch as also the concept of *daiva* synthesized in the Purāṇa literature. Though the present name and form is believed a representation of the Immortal Principle.¹⁹¹

D. Vedāṅga Period

Later to the Upaniṣads, Jyotiṣa appears in the post Vedic literature which is inclusive of the Vedāṅgas and the Dharmaśāstra texts. Jyotiṣa comprised as one of the six Vedāṅgas (limbs of the Veda) is a development of this period. Practically utilized for proper sacrificial and other rituals employed from the Veda is the chief identity of Jyotiṣa expressed in this period.

Karma in this period occurs chiefly in the systems expressing the man cosmos connectivity and also in the Heterodox works. The subject matter of this period being principally concerned with the teachings of the Veda, the correlation of Jyotiṣa and Karma coalesce the aspects dealt with earlier working on the exclusive authority of the Veda.

1. Ideology in the Vedāṅga Period

i. Idea of Saṃsāra

Rebirth or cycle of births and deaths which is one of the chief topics of the Upaniṣads is frequently addressed as Saṃsāra in the Dharmaśāstra. Whereas the Upaniṣads attempts to reach the endpoint of rebirth through knowledge and emancipation using of the term Saṃsāra, though not very often occurs in an adverse sense as an aftermath for an individual who fails to attain liberation¹⁹² which is a principle topic there. They also place the activities of mind at the root of Saṃsāra¹⁹³ which worked against Release. Whereas in the Smṛti literature, whose foremost object pertains to the duties (Dharma) to be performed by different Varṇas and Āśramas actions come in a sense of obligation rather than of the nature of scrutiny as in the Upaniṣads. Here the word Saṃsāra carries the sense of *gati* or *yonī*¹⁹⁴ and appears in an established way with an adaptability on part of the culture as a consequence to be faced its acceptance with a positive faith. Rebirth is yet believed an outcome of sin leading to birth in various forms and regions.¹⁹⁵

ii. Nature of Satya

Satya is eulogized even deified as Brahman, is believed as an ancient form of Dharma and appears in numerous aspects in this period.¹⁹⁶

iii. Sacrifices as Prakṛti and Vikṛti

Sacrifices come in the form of Prakṛtis as well as Vikṛtis, the basic model of Darśapūrṇamāsa sacrifice a model for similar type of iṣṭis in this period. Also the knowledge of *parvan* remain important in this period.¹⁹⁷ The Polestar Dhruva is believed as an emblem of constancy the thought displays an utility in most of the Sūtras.¹⁹⁸

2. Jyotiḥśāstra in the Vedāṅga Period

i. As a Vedāṅga

According to the extant texts of Jyotiḥśāstra, this period constitutes the second period of the development of Jyotiḥśāstra following the Veda period and is termed as the Vedāṅga period.¹⁹⁹

ii. Early Form of Jātaka

The earlier Saṁhitās of Garga, Parāśara and others come under this period.²⁰⁰ The Siddhāntas, exclusively based on the Gaṇita branch of Jyotiḥśāstra start appearing at the ending boundary of this period.

The Kalpasūtras and rest of the literature on Dharmasāstra constitute the texts on Jyotiṣa in this period. Rāśis (zodiac signs), and Vāra (weekdays) were not yet introduced to the scheme of Jyotiḥśāstra, months being addressed as Caitra and the rest, this period²⁰¹ bifurcates from the later one though with a manual intervention compared to the self existent absolute authority of the Vedic scriptures is reliant on the Vedic passages²⁰² and thereby indigenous whereas the later period shows the admixture of foreign elements.

iii. Vedāṅga Jyotiṣa: Treatise on Astronomy

The Vedāṅga Jyotiṣa which is the earliest extant text on Jyotiṣa happens to be of this period. It deals with the positions of the Sun and the Moon with reference to the Nakṣatras, without any reference to Rāsi divisions or Planets (Grahas), relates the

solar and the lunar months. It also deals with the Adhimāsa, Tithikṣaya and such topics essential for the purpose of rituals. The year began with Udagayana in Vedāṅga Jyotiṣa whereas with Vasanta in the other texts of the similar period. The terms as Mūhurta, Kṣana occur in the other Vedāṅgas.²⁰³

iv. Divisions of Time from Truṭi to Yuga

The Arthaśāstra refers to several divisions of time from Truṭi to Yuga and equals an Ahorātra to thirty Muhūrtas without referring hours.²⁰⁴

The concept of four Yugas appear in the Epics and the Manusmṛti.²⁰⁵ Yājñavalkya mentions a Grahayajña, also the concept of Devaloka and the path of the Pitṛs²⁰⁶ occur in this period.

The Nakṣatra system fixed as 27 in number is an acceptance in this period with the disappearance of Abhijit expressed in a myth in the Vanaparva (230. 2-11).

3. Karma in the Vedāṅga period

i. In the Systems

Karma in this period chiefly lies in the Philosophical Systems. It is in this period where Karma became one of the prime topics of enquiry of the subject raised by the Upaniṣads as a prominent factor to keep the Individual Ātman in the cycle of rebirth. This period is important in the evolution of Karma for if the Upaniṣads established Karma as a cosmic law of causation, subjective to ethical retribution, it is this period which enhanced its deterministic nature, bringing forth forcefully the angle of *daiva* as an ‘effect’ placing man at an inescapable receiving end, equally made Karma a law of personal responsibility and self-effort. On account of the comprehensive study in this period, Karma emerged as a doctrine, its operation studied from two interconnected perspectives, universal and individual.

Amongst the systems, the Vedānta and the Sāṅkhya dealt with the cosmic aspect of Karman, the Vedānta system believed the embodiment of the Jīva basically non-different from Supreme Ātman whereas the Sāṅkhya project dual entities the Prakṛti and the Puruṣa behind the origination of the world though they commonly propound the origination of Karma due to ignorance. Karma is deemed a *Nimitta*

(efficient cause) for the origination of a new body and life.²⁰⁷ The concept of *apūrva* was also formulated which decided the formation of future of the Soul, the time lapse between the act and the result joined by the potency created by the act serving as a connecting link.²⁰⁸ The birth, life and the happiness and the sufferings the Jīva undergoes came to be understood as the result of past actions of an individual.²⁰⁹

ii. In the Smṛtis

The Smṛtis varigate Karma in various types, Pañcamahāyajñas²¹⁰ are activities distinct from moral acts whereas also from sacrifices which are considered as a Dharma or a religious duty. The Nitya and Naimittika ones were essential to destroy the previous sins.²¹¹ Gītā prescribed actions, yajña, tapa and dāna were declared as purificatory ones.²¹² Karma of two kinds, Pravṛtti, concerned with happiness in present world and heaven and Nivṛtti concerned with salvation existed in this period.²¹³ The teachings of the Upaniṣads were reconciled in this period and liberation from the worldly existence by means of various modes of Karma were adopted.

The Epics believed Karma as a causative force, the past actions surface in the present life was a belief thus *daiva* takes a prominent position in this period.²¹⁴ Equally the importance of human effort is expressed in the Yājñavalkya Smṛti.²¹⁵

iii. In the Heterodox Sects

In the Heterodox Sects, the Jainas believed Karma as material whereas the Buddhist presented it in the form of a *bīja*. According to the Jainas, the material form of Karman, *Pudgala* operate through body, mind and speech. Intent is not a precondition for incurring sins. The soul of the form of illumination and perfect knowledge inheres the capacity to attract matter which leads to the formation of a *Karmaṇa Śarīra* which leads to rebirth in various forms. With such an explanation of the operation of Karma, the freedom from the bonds of Karma is said to be by means of *Samvara*.²¹⁶ The Buddhist believed Karma as primarily mental the three aspects of Karma kāya, vācī and manokamma²¹⁷ are primarily considered the outcome of will orientation. Karma is said to be the cause of inequality in human, the diversity arising on account of the variety of *trṣṇā*, thereby a sense of personal responsibility is made

an aspect of Karma. Transference of Karma is also a topic treated by the Buddhist schools.

The flow or the motion of Karma is also one of the aspects of Karma in the Heterodox sects, the *gati* (motion) accorded as per the conduct of the individual.²¹⁸

The consequence of present actions are resultant in the future births as moral actions of the present are not connected to the caste of a person,²¹⁹ Jāti believed as an outcome of past actions. Rather the overall destiny of a human is believed a merit and demerit of his past. Rebirth is declared as dependent on *niyati* and not on one's (present) deeds.²²⁰

In the post-Vedic, the latent impressions of the past Karmas are believed an important factor in the formation of future.

4. Correlation in the Vedāṅga Period

i. Auspicious Times and Actions

In this period actions were performed on auspicious times derived from the positions of Sun and Moon in various Nakṣatras. Auspicious Nakṣatras and Seasons were important in the Sūtras which followed the Brāhmaṇas for sacrifices and other ritual works. Tithis were rarely mentioned, Rāśis and Weekdays find no mention in the Sūtras and Smṛtis.

The Sūtras deal with appropriate periods for setting up of the sacred fires²²¹ derived from Seasons and also from Moon in conjunction with specific Nakṣatras. The precise time for offering Agnihotra,²²² the position of the New and Full Moon for Darśapūrṇamāseṣṭhi,²²³ the seasonal sacrifices connected with the Seasons in the year,²²⁴ continue in this period. The Agniṣṭoma²²⁵ concerned with specific times of the day and the Pravargya rite,²²⁶ a Sun spell also continue in the Sūtras, as also the Aśwamedha²²⁷ performed for a specific period.

Nakṣatras were generally in use for all sorts of purposes Agricultural activities were suggested on various Nakṣatras.²²⁸ ĀpDS.²²⁹ connects Puṣya Nakṣatra with prosperity. Ātharvaṇa-Jyotiṣa mentions acts to be or not to be done on nine groups of Nakṣatras.²³⁰ Nakṣatra scheme is also present in Vaikhānasasmārtasūtra. Nakṣatras

and their deities were specifically important²³¹ and Moon in certain Nakṣatra was connected with actions.²³² The Gṛhya and Dharmasūtras mention auspicious times for domestic rites. Nakṣatras were related to Saṁskāras.²³³ New and Full Moon offerings find mention.²³⁴ Occasional offerings to Nakṣatras also occur in the literature of this period.²³⁵

ii. *Divinations and Countermeasures*

Omens provided with Śāntis (ritual countermeasures) occur commonly in the Sūtra literature. Birds as owl²³⁶ and pigeon²³⁷ as birds of omen continue in this period. Birds apart from visitors to the dwellings of gods also fly to the world of the pitṛs is recorded.²³⁸ Countermeasures were employed for ant heaps²³⁹ and for diseases, for dreams and for utpātas as well.²⁴⁰

Planets gave the foreknowledge of rainfall and the sprouting of seeds,²⁴¹ Rāhu and Ketu were portentous with a tendency for destruction.²⁴² Astral omens concerned with rainfall and diseases were pursued and the characteristics of individual by Moon posited in Nakṣatras for a probable future were studied.²⁴³ The position of planets was established in relation with the Nakṣatras at the time of the Mahābhārata war. Planets were revered in this period they being first mentioned in the Baudhāyana Dharmasūtra.²⁴⁴

iii. *Rebirth and Karmavipāka*

Apart from the performance of ritual actions on auspicious on part of the correlation times, flourished the concept of *daiva* explained in the philosophical literature of this period. The idea of rebirth as a consequence of the past actions put forth by the Upaniṣads develops in this period as to the reading and rectifying of the future from the manifested birth of the individual with the aid of the correlation

Daiva is the manifested actions of previous birth.²⁴⁵ The development of this concept is also evident in the Rāmāyaṇa and Mahābhārata.²⁴⁶ That it fructifies with the agency of time (Kāla) and that the creatures go through the cycle of existence in accordance with their Karma as a part of the law of nature is also expressed.²⁴⁷ Karma as born of the guṇas of Prakṛti and that the Varṇas are created on the basis of the guṇas (inherent qualities) and Karmas (actions/deeds) is also an expression.²⁴⁸

Amongst the Jyotiṣa texts of this period, the Ātharvaṇa Jyotiṣa express the acts to be done on Nakṣatras and the characteristic of the individual born on specific nakṣatras. Also the Jātaka texts existing in their earliest form in this period are concerned with the past actions of man.

iv. Actions and Gati

The subject of the motion of the Jīva after death connected to the actions in present life is traced by the Upaniṣads and accordingly is pursued by the Smṛti literature. Nirukta states on the *gati* of Jīva²⁴⁹ Manusmṛti accords hell as a punishment for sinners and the later rebirth accordingly.²⁵⁰ The Gītā²⁵¹ follows the Upaniṣads on the topic of paths, related to the Śukla and the Kṛṣṇagati, the Mahābhārata and the Yājñavalkya Smṛti refers to them.²⁵² Vision of this motion by means of motion of the cosmic light bodies constitute the correlation.

E. Varāha Period

This period begins from the Christian Era overlapping the Smṛti period, extends precisely from the 3rd C. A.D. and covers the Medieval period.

With regard to Jyotiṣa, this period markedly distinguishes from the prior ones due to the additions of foreign elements, especially the Greek, to the native structure of Jyotiḥśāstra. A clear-cut branching of Jyotiḥśāstra in its three branches, the Siddhānta, Saṁhitā and Horā is evident in this period, the Siddhāntas based on the Gaṇita part of Jyotiṣa and the Jātaka based Horā texts being the chief texts of this period.

Karma appears chiefly in the Purāṇa literature, in the commentaries to the Philosophical texts and in the Dharmasāstras. Karma as a theory is already established in this period, most of its prior aspects retained and reformed.

Jyotiḥśāstra being highly influenced by Greek Astronomy and Astrology which is completely devoid of the concept of Karman the correlation of Jyotiṣa and the doctrine of Karma of this period concentrated in its Horā branch to combine Horoscopy with the actions of past lives. Present birth considered as a Karmavipāka,

rectificatory actions for birth on certain Nakṣatras and Muhūrtas in the form of Samskāras is the chief form of correlation.

Text on all the three branches of Jyotiḥśāstra are composed by Varāha, they being extant and popular till date. His Saṁhitā and Horā texts deal with characteristics of cosmos and human as also with the past actions of man thereby coined as Varāha period.

1. Ideology in the Varāha Period

i. Regarding Rebirth

The belief of rebirth on account of sins continue in this period.²⁵³ Kāla and Karma as also Svabhāva came to be held responsible for creation of a new life.²⁵⁴ The belief that the fruits of actions whether good or evil were to be undergone became prevalent.²⁵⁵

In case of Śakunas the element of faith became equally important while performing rectificatory rites as also Śakunas came to be viewed more rationally.²⁵⁶

ii. Regarding Karma

Karma surfaced from ignorance (avidyā)²⁵⁷ resulting in existence in various states was a belief as also Vrata as a means to secure various lokas was believed. Karma is equated with god.²⁵⁸ Also the causation of nature and time is an acceptance.²⁵⁹

2. Jyotiḥśāstra in the Varāha Period

i. Rāśis, Weekdays and Planets

Rāśis, Weekdays and Planets mark their existence in this period.²⁶⁰ Rāśis and especially Planets occur with astrological significance related to the Jātaka branch, the Planets though mentioned earlier in the Vedavedāṅga period hardly convey any Astrology.

ii. Growth of Siddhāntas

The Samhitās of Garga, Parāśara and a few of the ancient Siddhāntas existed prior to this period yet a clear development related to a distinct branching of Jyotiḥśāstra is evident specifically in this period.

The Gaṇita branch of Jyotiḥśāstra shows a steady growth in this period beginning from the initial five Siddhāntas to the most distinguished Siddhāntas of Aryabhaṭṭa (476 AD), Brahmagupta upto Bhāskarācārya (1124 A.D.) later to which Jyotiḥśāstra wholly centered around Astrology out of which it had originally sprung.²⁶¹

iii. Decline of Samhitā Branch

The importance of Samhitā Skandha gradually declined after Sripati (960 AD) though its Muhūrta branch became popular after 1300 A.D. with the introduction of Tājika branch of Arabic influence which is prevalent till date.

iv. Horā Branch Integrated with Greek Astrology

The Horā branch integrated with Greek terminology of Horoscopy appear in this period though the views of the Yavanas are frequently contrasted. The conception of the Houses of Greek Astrology, appear as bhāvas in the Indian Counterpart in the sense of *being* or *becoming* or the innate disposition²⁶² of an individual and his future in accordance with that. Also expressive in terms of past actions of man is Horāśāstra providing a vision of the actions of past lives of an individual thereby throwing a focus on the journey of the Jīvātman.

Opinions differ as to placing either Vedāṅga Jyotiḥśāstra or Varāha at the midpoint of the developmental history of Jyotiḥśāstra though both can be termed as milestones of the journey of Jyotiḥśāstra. The text of the Vedāṅga Jyotiḥśāstra being the first of the extant texts on Jyotiḥśāstra display the practical utility of the subject as also exhibits its indigenous structure. While Varāha's texts exist on all the three branches of Jyotiḥśāstra along with commentaries of Utpala, they give an access to the predecessors of the subject also on one hand reveal the pure Indian nature of Jyotiḥśāstra whereas on the other presents its admixture with the Greek elements.

In terms of the correlation, the Vedāṅga Jyotiṣa is a proof of the times when the future of an individual was to be achieved by performing ritual actions on specific times guarantying one such a future and promoting self effort. Whereas the texts of Varāha show a bifurcated development displaying Jyotiṣa as a window to the past actions of men and thereby the vision of future tendencies and actions connected with auspicious times for rectifications and saṁskāra rites.

3. Karma in the Varāha period

i. Cause of all Activity

Karma is believed the cause of all activity in this period.²⁶³

ii. As human actions

In concern with human, Karma is the cause of happiness and unhappiness.²⁶⁴ Birth, length of life and death is due to past actions is expressed in this period.²⁶⁵ Evil actions are the cause of diseases, the root of all unhappiness is believed to be Karmas in this period.²⁶⁶ Birth of various classes is due to deeds as also heaven and hell though heaven is believed as a temporary abode.²⁶⁷ Mokṣa along with Karma is also a topic of elaborate discussion.²⁶⁸

4. Correlation in the Varāha period

i. Divinations

Divinations form a part of the correlation of this period. The meaning of Śakuna as forewarning of the impending events conveyed by prognostications from birds and other means is a common practice. Such prognosticators as the falling of lizards, movements of body parts, dreams, sign while on journey or invasions, sorts of Utpātas are interpreted in the literature of this period.²⁶⁹ The causes of earthquakes are studied.²⁷⁰ Also Śakunas are viewed as a means of knowledge of actions of past life.²⁷¹

ii. Characteristics of an Individual

Reading of the characteristics of an individual from the Rāśi at birth and his future by means of Horoscopes is a common trait of the correlation of this period.

Nakṣatras and their characteristics are also a topic of study to understand the characteristics of an individual as also for the performance of ritual actions. The study of *parvans* is also of significance.²⁷²

iii. Relative Time Planes

Seemingly as a representation of the activity of the qualityful Brahman the relative calculations of time find mention. The time calculations related to human, pitṛs as also divine are expressed. Conversions of Manvantaras into Kalpa equivalent to a day of Brahma occur.²⁷³ Time is defined with the theories of Yuga also the idea of Timelessness of the universe simultaneously exist.²⁷⁴ The two forms of time, subtle as well as great find mention of which the latter is measured by the motion of the Planets in this period.²⁷⁵ Various aspects of Planets connected with Astrology were studied and held an applicatory value, inclusive of their forms and characteristics correlating with the individual.²⁷⁶

iv. Daiva and Puruṣakāra

Karma bears two forms in this period thereby the co-relation with Jyotiṣa occurs in two ways. Daiva and Puruṣakāra are equally powerful in deciding the life span of an individual. Karma is the prime cause of origin and existence of living beings and diseases in this period.²⁷⁷ The factor of Daiva is dealt with the Jyotiṣa texts as the vision of the past actions.

As of Puruṣakāra, Sun worship remains prominent in this period.²⁷⁸ Rituals related to Sun and Śāntihomas were fixed on the *parvans*.²⁷⁹ Actions on the lords of Tithis, Nakṣatras and Months were arranged for Saṁskara rites.²⁸⁰ Rectificatory actions were arranged on specific times to avoid the evil influence of Planets,²⁸¹ Śānti rites for various sorts of Śakunas as Utpāta and Nimitta also occur. The Viṣṇudharmottara record predictions related to eclipses.²⁸² Actions related to Saṁskāras and Śānti rites prominently occur in this period.

Concluding Remarks

Samhitā Period

Observation of nature for inferring human future is a common practice in the Samhitā period. Light and nature deities constitute the chief cosmic forms in this period especially the early RV, whose qualities and actions are an amalgamation of human nature and actions. Certain cosmic actions are deemed inauspicious pertaining to which countermeasures are employed. However, the study of cosmic characteristics and cosmic order brought forth by the heavenly bodies and arranging ritual actions on cosmic time is the primary aspect of the correlation of Jyotiṣa and Karma of the Samhitā period.

The idea of survival of human existence after physical death exists and actions in present life decide the future discourse or after life is believed in the Samhitās pertaining to which cosmic divisions as heaven as well as hell appear in the literature. Exploration of the cosmic screen to this effect also occurs as a part of the correlation in the later RV.

Ideal future pertained to the path of light. Darkness being a condemned idea calculation of time on the motion of Sun and Moon and arrangement of sacrificial actions for the obtainment of such a future leading to the path of light necessitated the fusion of Jyotiṣa and Karma in the Samhitās in accordance with which a systematic and organized worship of nature is formulated and continues till the end of the Samhitā period.

Brāhmaṇa Period

The study of natural characteristics and actions continue in the Brāhmaṇas. Human actions are performed for material joys also belief in the existence of heaven as a place for rewards of sacrificial works where as hell as darkness where the evil doers are punished sustain in this period.

Ritual actions performed in present were deemed essential for creation of future of man. Long life, heaven and immortality continued to be desired by man for which actions based on the order of heavenly bodies were arranged. Proper time derived by the actions of luminaries is associated with rituals though there is not

much Astronomy in the Brāhmaṇas Nakṣatras are connected to deities which play a subordinate role in the Brāhmaṇas compared to the Samhitās.

Sacrificial act being principle, the central role of Agni as a connecting medium between man and nature continues. Worship is yet natural as stars are still believed as the temples in which gods reside (Tai.Brā.I.2.5.11, Śat.Brā.XIV.3.2.). The chief form of worship is of the single creator god Prajāpati in whom all deities are unified since RV.X.121. Time is equated with Prajāpati and actions are arranged on his joints which are cosmic points created by the motion of Sun and Moon. Equally important is the beginning of the Nakṣatra System marked in the Kṛttikās observed as never swerving from the East. Viṣuva as the middle of the sacrificial sattrā and Sun being in the zone of the gods and the fathers indicate that sacrificial actions arranged on the cosmic order served an intellectual basis to the explanatory and mythological character of the Brāhmaṇas.

Ṛta, the order of heavenly light bodies has come as Satya in the Brāhmaṇas which is equated with the sacrifices. The moral nature of Varuṇa celebrated by Prajāpati in this period also reflects in sacrificial actions as morality yet coincides with ritual works. The effort to provide a physical natural basis to time and desire in the form of Prajāpati is also an important development as well as a practice. These instances and such statements as the knowledge of time makes one sinless, or leads one to heaven displays that the following of cosmic actions through rituals was an intentional business, carried on to subserve a definite purpose related to human for which the correlation worked.

Upaniṣad Period

In an effort to expose the nature of the cosmos and man's place in it, the correlation in the Upaniṣads chiefly worked to make understand the nature of the abstract principle Ātman behind the visible workings of the universe. Ātman being of the nature of light, visible light forms served as symbols to the understanding of the nature of the supreme principle in this period.

Being an unchangeable principle expressed by the term Satya as eternal, the correlation proceeds to explain the original principle by the theory of name, form and

action. The visible activity a representation of the immortal principle being covered by the reality of names and forms is also a vision of the ordered activity of Brahman by means of 'time' displayed by the order of the cosmic light forms work on which is a way to Brahman.

The projection of a sphere beyond time is also a subject matter of the Upaniṣads, the correlation extends to explain the qualityless Brahman, its light form visualized in a dream.

The Upaniṣads with the concept of rebirth and transmigration led the correlation of Jyotiṣa and Karman to the theory of *Karmavipāka* as to the vision of the past actions. As also the realization of Brahman for the unity of the Brahman Ātman connected the correlation of *perception* to the activity to *knowledge*.

Vedāṅga Period

Jyotiṣa was a subject of considerable respect (Gautama Dharmasutra XI. 12-13, 15-16) in the Vedāṅga period whereas Karma was emerging as a doctrine of human ethics and the duties concerned with it. The correlation of Jyotiṣa and Karman of this period is relevant with deriving times for rituals and with the vision of past actions of man and his probable future. More so post-Upaniṣads it is connected with the evaluation of human actions, physical as well as moral on the cosmic background. A focus on the present birth of man as a manifested link to his past actions and thereby his future is evident, for which the teachings of the culture in the form of Dharma to be followed inclusive of work on time for certain rectificatory and essential actions constitute the chief form of the correlation of this period.

Varāha Period

Natural cosmic action connected to the past actions of man is evident in the Varāha-period. Genethliology connected to the daiva aspect of Karma is a regular practice as also Karma and Punarjanma linked by means of horoscopy are the most salient features of the Varāha period.

End Notes

1. Fetters of Varuṇa which bind the sinners (RV. I. 24.15, VI. 74.4), release from sin (RV. II.28.5, V. 85.7.8). According to Keith, “the conception of sin as punished by Varuṇa is an Aryan one and not a conception borrowed from a semitic race”. The Religion and Philosophy of Veda and Upaniṣads, p.246.
2. जीवेम शरदः शतम्। RV. X. 18. , VII.66.16. AV. XIX.67.
3. To Agni RV. I.31.7.
4. Savitr (RV. IV. 54.2.), Agni (RV. VI. 7.4.).
5. Ṛbhus RV. IV 35.3., RV. III. 60.3., RV I.110.4.
6. Agni (RV. I. 96.2), Apām Napāt (II. 35.2) , Uṣas (RV. VII.78.3).
7. Prajāpati (Tai. Saṁ. III. 3.7.1), Brahmanaspati (RV. X. 72.2), RV. I. 164.46.
8. Vedic Mythology, p. 11.
9. RV. V. 63.7.
10. H/o Dh.Vol. V. 1, p. 2.
11. Ahura keeps the Earth from falling and provides a pathway for the Sun. Religion and Philosophy of Veda, p. 83.
12. Crow as a dark bird (RV. X. 16.6), pigeon (RV. X. 165.2), owl (ulūka) (RV. X. 165.2).
13. Mitra and Varuṇa (I. 115.1), Agni (I. 115.1).
14. RV. I. 102.2; X.68.10, 19.3; VII.41.9; I. 72.10).
15. Tai, Saṁ. V. 4.1.3.
16. RV. IX. 113.9.
17. तिस्रो द्यावः सवितुर्द्या उपस्थां एका यमस्य भुवने विराघाट्॥ RV. I. 35.6.
18. RV. V. 85.5.
19. RV. I. 175.4, IV. 28.2.
20. The wedding hymn of Soma and Sūryā (RV. X. 85.).
21. AV VII. 81.3-4.
22. पौर्णमासी प्रथमा यज्ञियासीदह्नां रात्रीणामतिशक्वेषु। AV. VII.80.4.
23. Tai. Saṁ. IV. 4.10; Mai. Saṁ. II. 13.20.
24. RV. I. 164.2, I.4.9.3, X.90.6; AV. VI 6.55.2; Tai Saṁ.1.6.2.3.

25. RV. X. 161.4; X. 90.6; VII. 103.3,9; II. 12.11; X. 161.4.
26. RV. I. 164.15.; AV. VI. 55.2.
27. Tai. Sañ. IV. 4.11.1; Vāj Sañ. 13.25.
28. RV. I. 110.4, I. 140.2, I. 161.13, I.164.44.
29. Vāj. Sañ. 10.12, AV.VI.55.2, Tai. Sañ.1.6.2.3.
30. AV. V. 6.4.
31. तस्मादादित्यः षण्मासो दक्षिणेति षडुत्तरेण। Tai. Sañ. 6.5.3
32. H/o Dh. V. 1. p, 675.
33. उता यातं सङ्गवे प्रातरहो मध्यन्दिन उदिता सूर्यस्य। RV. V. 76.3.
34. Also Tai. Sañ. VII. 4.8.
35. Sañsarpa as Arñhaspati (Tai. Sañ. I. 4.14.1, VI. 5.3.4).
36. RV. III. 55.18., I. 158.6., X. 72.2., I. 103.4.
37. Vedic Mythology, p. 2.
38. RV. VII. 63.1, I. 50.5.
39. RV. I. 164.14; Tai.Sañ. 3.1.11.
40. Savitr as stimulator (RV. V. 81.5), Pūṣan as protector (Paśupā) preserver of cattle (RV. VI. 58.2) Viṣnu promotes conception (RV. X. 184.1) protects embryos (RV. VII. 36.9).
41. Vedic Mythology, p. 99.
42. As a path leading to the gods Tai. Sañ. 5.8.5.
43. RV. II. 24.3, IV. 50.4, X. 68.4-9.
44. Agni (RV. I. 59.5, I.68.2), Indra (RV. VIII. 61.11).
45. RV. II. 42-43, X. 165; AV VI. 27-29, VII. 64.
46. The term Śakuna initially the name of a bird in the later literature is applied to the divination branch of Jyotiḥśāstra.
47. RV. II.42.1, 43.183.
48. यदुलूको वदति मोघमेतद्यत्कपोतः पदमग्नौ कृणोति। यस्य दूतः प्रहित एष एतत्तस्मै यमाय नमोस्तु मृत्यवे ॥
RV. X. 165.2.4
49. RV. IV. 39.3.
50. उत्पाताः पार्थिवान्तरिक्षाः शं नो दिविचरा ग्रहाः। AV. 19.9.7.

51. Acts of Varuṇa in अतो विश्वान्यद्भूता चिकित्वाँ अभि पश्यति। कृतानि या च कर्त्वा। RV. I. 25.11.
52. Prayers to Varuṇa (RV. II. 28.10), to Savitr̥ (RV. V. 82. 4-5), delivered to Trita Āptya (RV. VIII.47.15).
53. Atharvaveda, p. 81.
54. Jyesthagnī in AV. VI. 110.2.
55. Indra as winner of light (RV. III. 34.8, VIII. 78.4); Also Trita Āptya RV. V. 9.5.; Maruts RV. I. 86.10.
56. Tai. Saṁ. 6.4.8.3, 2.1.7.4.
57. सुदिनत्वे अह्नां RV. VII. 88.1.
58. RV. X. 82.13.
59. यज्ञ भुवनस्य नाभिः। RV. I. 164.35.
60. Birth of Sun due to sacrifice. RV. I. 83.5.
61. Pañ. Brā. XXII. 10.3.
62. Ait. Brā. I. 6.7; Śat. Brā. III.4.2.8.; Kauṣ. Brā. II.8.; Mai. Saṁ. I. 9.3.
63. Tai. Saṁ. 2.4.1; AV. XIII.1.7; Śat. Brā. XI. 2.3.6, Pañ. Brā. XXIV. 19.2.
64. Ait. Brā. VII. 10.
65. Tai.Brā. I. 6.5.4; Pañ. Brā. XV. 2.4.; Śat. Bra. XII. 7.2.17, IV. 5.1.6, I. 3.1. 14-16.
66. Tai. Brā I. 7.2.6; I. 5.3.3.
67. अथ खलु ऋतुमयोऽयं पुरुषः स यावत्क्रतुरस्माल्लोकैत्येवं ऋतुर्धमुं लोकं प्रेत्याभिसम्भवति। Śat. Brā. X. 6.3.1.
68. Creator of gods (Śat. Brā. 11.1.6.14, Tai. Brā. 8.1.3.4) creator of asuras (Tai. Brā. 2.2.2.3).
69. Śat. Brā. V. 6.5.1, Śat. Brā. I. 1.1.1.
70. Kauṣ. Brā. XIII.1.
71. Kauṣ. Brā. XXVIII. 1.
72. Concept of Punarmṛtyu Śat. Brā. XI.4.3.20., XII. 9.3.11, 12.
73. Śat. Brā. X.4.4.
74. Śat. Brā. IX. 1.1.43, Ait.Brā. VII. 7.
75. IV. 4.11.1.

76. As an unfavourable period. Ait.Brā. III. 1.; of thirty five (Śat. Brā. IX. 1.1.43) or thirty six days (Śat. Brā. X. 5.4.5).
77. Śat. Brā. II. 13.16 (six Ṛtus), three and six Ṛtus (Śat. Brā. XII. 8.2.33, five Ṛtus (Ait. Brā. I. 1.).
78. वसन्तौ ग्रीष्मो वर्षाः। ते देवा ऋतवः। Śat. Brā. II. 1.3.1.
79. स यत्रोदगावर्तते देवेषु तर्हि भवति।---- यत्र दक्षिणावर्तते पितृषु तर्हि भवति। Śat. Brā. II. 3.2.3.
80. H/o Dh. V. 1 p. 659.
81. Śat. Brā. II. 1.3.1-5., the word pakṣa occurs in the Brāhmaṇas Tai. Brā. II. 2.3.1., Tāṇḍya Brāhmaṇa V. 19.14.
82. Amāvāsyā broken in Sinīvālī and Kuhū and Paurṇamāsī in Anumati and Rākā. Ait. Brā. 32.10. Gāpatha Brāhmaṇa. 6.10.
83. Sinīvālī (RV. II. 32.6-7, Vāj. Saṁ. 34.10, AV. VII. 46.1-2).
Kuhū (AV. VII. 47.1.).
Anumati (RV. X. 59.6, X. 167.3).
Rākā (RV. II.32.7, V. 42.12).
These four as recipients of caru in Tai. Saṁ. 1.8.8.1. and Śat. Brā. IX. 5.1.38.
84. Ait. Brā. 32.9.
85. Five parts of a day. Śat. Brā. II. 3.2.9.
86. Śat. Brā. X. 4.2.18, XII. 3.2.5.
Names of fifteen Muhūrtas of the day in Tai. Brā. III. 10.1. 1-3.
87. एकविंशमेतदहरुपयन्ति विषुवन्तं मध्ये संवत्सरस्य। Ait. Brā. IV. 18. Also Tai. Brā. 1.2.3.
88. Performance of Saptadoṣa Stoma three days prior to Viṣuvat to hit Svarbhānu. Śān. Brā. (24.3) Also Tāṇḍya Brāhmaṇa IV. 6.3-13; IV. 7.1.).
89. Ait Brā. VII. 11.
90. Śat. Brā. 2.6.1.4., Kauṣ. Brā. 1.2, Śat. Brā. 2.4.2.2.
91. Śat. Brā. 1.2.5.8.; Vāj Saṁ. 1.28.
92. तस्मात्कृत्तिकास्वादधीत। एता ह वै प्राच्यै दिशो न च्यवन्ते सर्वाणि ह वा अन्यानि नक्षत्राणि प्राच्यै दिशश्च्यवन्ते Śat. Brā. II. 1.2.2-3.
93. Jai. Brā. 3.152.
94. Śat. Brā. VI. 1.2.15, Kauṣ. Brā. VI. 1, Tai. Brā. II. 3.6.1.

95. Tai. Brā. I. 5.2-7.; Swāti as the heart does not match with the present sky. Bhāratīya Jyotiṣaśāstra p. 60.
96. प्रजापतेर्ह वै प्रजाः समृजानस्य पर्वाणि विसखंसुः। स वै संवत्सर एव प्रजापतिस्तस्यैतानि पर्वाण्यहोरत्रयोः सन्धी पौर्णमासी चामावस्या चतुर्मुखानि। Śat. Brā. I. 6.3.35.
97. यज्ञो वै कर्म। Śat. Brā. I. 1.2.1
98. यज्ञो वै श्रेष्ठतमं कर्म। Śat. Brā. I. 7.1.5, Tai. Brā. III.2.1.4.
99. तच्छंयोरवृणीमहे। गातुं यज्ञाय। गातुं यज्ञपतये । दैवीः स्वस्तिरस्तु नः। स्वतिर्मानुषेभ्यः। ऊर्ध्वं जिगातु भेषजम्। शं नो अस्तु द्विपदे शं चतुष्पदे। Tai. Brā. III.5.11
100. Śat. Brā. VI. 2.2.27.
101. Śat. Brā. X. 4.3.
102. तस्य व्रतमुद्यन्तमेवेनं नेक्षेतास्तं यन्तं चेति। Śāñ. Brā. VI. 6.
103. Ait. Brā. I. 22.14, Kauṣ Brā VIII. 3-7.
104. Śat. Brā. I. 7.2.22; Tai. Brā. I.5.6.3,4.
105. Tāṇḍya Brā. 14.12.9, Śat. Brā. 11.2.7.3, Go. Brā.5.23, Tai. Brā. 1.6.8.3
106. Tai. Sam. I. 14.4.; Kauṣ. Brā. 19.2.
107. Kauṣ. Brā. V. 8.
108. अग्निर्वाव संवत्सरः। आदित्यः परिवत्सरः। Tai. Brā. I. 4.10.1.
109. Śat. Brā. 4.2.1.1, 1.2.1.3, 5.1.4.2.
110. Tai. Brā. 1.1.4.8, 1.7.10.1, 1.5.10.7, 1.5.2.7, Śat. Brā. 2.1.2.18, 10.4.4.2.
111. Śat. Brā. 2.1.2.
112. Bhāratīya Jyotiṣaśāstra p. 38,39.
113. Sacrifice under Abhijeet to make the king unconquerable Tai. Brā. 1.5.2. Oblations offered to deity Bṛhaspati and the Nakṣatra Tīṣya with a desire to overshadow Brahma Bhāratīya Jyotiṣaśāstra p. 54.
114. मैत्रेण कृषन्ते। Tai. Brā. I. 8.4. Also Tai. Brā. 1.5.2.; 1.1.2., 1.8.4.
115. This can be termed as an early evidence the origin of Jātaka Bhāratīya Jyotiṣaśāstra p. 101.
116. Tai. Brā. III.1.
117. Ait. Brā. 13.9 and Tai. Brā. 1.1.10. Also Ait. Brā. 3.33 for an Astronomical Significance.

118. प्रजापतिर्वै यज्ञस्तस्मिन्सर्वे कामाः सर्वममृतत्वम्। Kauṣ. Brā. XIII.1
119. प्रजापतिः संवत्सरो महान्कः। Tai. Brā. 3.10.1 संवत्सर एव प्रजापतिः। Śat. Brā. 1.6.3.
120. Śat. Brā. 1.6.3. Bhāratīya Jyotiṣaśāstra p. 49.
121. Man born in a world made by himself. Kauṣ. Brā.26.3., Śat. Brā. VI.2.2.27.
122. एकविंशमेतदहरुपयन्ति विषुवन्तं मध्ये संवत्सरस्य। Ait. Brā. IV. 18.; Ekaviṃśa equated with Āditya in Ait. Brā 18.18., Also Viṣuva equated with Puruṣa. Ait. Brā. 18.22.
123. Tāṇḍya Brāhmaṇa IV. 6.3-13; IV. 7.1.
124. Dikshit asserts the connection of Jyotiḥśāstra and Vedānta in this statement. Bhāratīya Jyotiṣaśāstra p. 69.
125. Satya as Brahma. Bṛ. Up. V. 5.1.
126. Bṛ. Up. I. 4.14.
127. सर्वं खल्विदं ब्रह्म। Chān Up. III. 14.1.
128. असतो मा सद्गमय, तमसो मा ज्योतिर्गमय, मृत्योर्मा मृतं गमयेति। Bṛ. Up. I. 3.28.
129. Tai. Up. III.1.
130. Bṛ. Up. I. 6.3, II. 1.20.
131. अनेन जीवेन आत्मना अनुप्रविश्य। Chān Up. VI. 3.2.
132. Śat. Brā. 10.6.3.; Chān Up. III. 14.1.
133. अहं ब्रह्मास्मि। Bṛ. Up. I. 4.10.
134. Kauṣ Up. I. 2.
135. Bṛ. Up. IV. 4.5-7.
136. Bṛ. Up. III. 2.13, IV. 3.15.
137. Kaṭha Up. II.3.14-15.
138. Chān. Up. VII. 1.2., VII.7.1.
139. Bṛ. Up. VI. 3.1.
140. Muṇḍ. Up. I. 1.5.
141. Bṛ. Up. IV. 4.22. declare Veda studies in the form of sacrifices and such as a pre-conditional phase for the knowledge of Brahma.
142. Chān. Up. VII.24.1
143. Chān. Up. III. 11.5.
144. Ait. Up. III.2.

145. Bṛ. Up. III. 8.9.
146. Bṛ. Up. II. 3.
147. ज्योतिरूपमसौ चन्द्रः। Bṛ. Up. I. 5.13.
148. Śvetā. Up. VI. 5. Expresses the First Principle as beyond three times.
149. Bṛ. Up. I. 2.4.
150. नैनं पुरा कालात्प्राणो जहाति। Bṛ. Up. II. 1.10.
 नैनं पुरा कालान्मृत्युरागच्छति। Bṛ. Up. II. 1.12.
 नो एव स्वयं नास्य प्रजा पुरा कालात्संमोहमेति। Kauṣ. Up. IV. 12.
 नो एव स्वयं नास्य प्रजा पुरा कालात्प्रमीयते। Kauṣ. Up. IV. 13.
151. Śat. Brā. I. 7.3.3.
152. AV. XIX. 53.10. as First Principle AV. XIX. 53 & 54.
153. कालः स्वभावो नियतिर्यद्दृच्छा भूतानि योनिः पुरुष इति चिन्त्यम् Śvetā. Up. I. 2.
154. Bṛ. Up. I. 2.4.
155. येनावृतं नित्यमिदं हि सर्वं ज्ञः कालकारो गुणी सर्वविद्याः। Śvetā. Up. VI. 2.
156. भूतं भवद्भविष्यमिति सर्वमोङ्कार एव। यच्चान्यत्रिकालातीतं तदप्योङ्कार एव। Māṇḍūkya Upaniṣad.
157. सर्वे निमेषा जज्ञिरे विद्युतः पुरुषादपि। Vāj. Saṁ. 32.2 and Mahānārayaṇa Upaniṣad I. 8.
158. Time divisions in terms of day of Brahma, Viṣṇu Purāṇa VI. 3.11-12.; Gītā IV. 8. as the recreation of the Supreme Form in every Yuga.
159. Mai.Up. VI. 14-15.
160. Muṇḍ. Up. 1.2.6.
161. Chānd. Up. IV. 12.2; 13.2.
162. Kaṭha Upaniṣad I. 1.17, Íśa Upaniṣad 11.
163. Bṛ. Up. VI. 2.16; Praśna Up. I. 9; Chāndogya Upaniṣad V. 10.3.; Muṇḍ. Up.1.2.10.
164. Kaṭha Up. 3.2. takes it in a positive sense as a way to Brahman, Demerits of sacrifices Chān Up. I. 10-12, IV. 1-3.
165. Bṛ. Up. I. 4.7.; Chān Up. III. 14.1, I. 9.1.
166. Bṛ. Up. I. 1.1.
167. Bṛ. Up. IV. 4.5.
168. Birth in various forms as Devas, Pitṛs, Gandharvas, the disparity as a consequence of Karma. Chān. Up. 4.15.5.

169. Bṛ. Up. I. 5.16.
170. Kauṣ. Up. 1.4; Muṇḍ. Up. III. 1.5.
171. Chān Up. VIII. 4.1.
172. Kaṭha Up. I.2.5., II. 3.14-15; Bṛ. Up. IV. 4.7; Muṇḍ. Up. III. 1.6. and III. 2.1,2.
173. Bṛ. Up. II. 4.5.
174. Chān. Up. 7.1.2.
175. Bṛ. Up. III. 7. 3-23.
176. Chān. Up. V. 11.
177. Chān. Up. III. 1-11, III. 19.1.
178. Bṛ. Up. VI. 4.21.
179. Maitri Upaniṣad VI. 14,15.
180. Bṛ. Up. V. 5.2.
181. Chān. Up. V. 4. and Bṛ. Up. VI. 2.
182. Duessen, The Philosophy of the Upanishads, p. 265.
183. Kauṣ Up. i. 4.
184. Bṛ. Up. I. 5.16.; Chān Up. 2.23.
185. Praśnopaniṣad I. 9-11.
186. Kauṣ. Up. III. 8.; Bṛ. Up. III. 2.13.
187. Chān Up. V. 10.2; Bṛ. Up. VI. 2.15,16.; Kauṣ Up. I. 3.
188. Kauṣ. Up. II.8. चन्द्रमसमेव ते सर्वे गच्छन्ति। or एतद्वै स्वर्गस्य लोकस्य द्वारं यच्चन्द्रमाः। Kauṣ. Up. I.2.
189. Chān. Up. V. 2.8.
190. Śāṅkarācārya on Bṛ. Up. II. 1.18.
191. Bṛ. Up. I. 6.
192. Kaṭha Upaniṣad III. 7; Śvetā. Up. VI. 16.
193. Muktikā Upaniṣad II. 37.
194. Manusmṛti XII. 52, 54, 70.
195. Manusmṛti XII. 54-59, Yāj. Smṛ III. 131., 206-215.
196. Śāntiparva. 162. 4,5,7-9.; Manusmṛti V. 106.
197. Gobhilagrhyasūtra I. 5.13.

198. ĀpGS.i.7.22.; HGS i. 7.22.14.
199. Jyotiṣa as one of the Vedāṅgas exists in the Smṛtis, Itihāsa and perhaps the older of the Purāṇas if any existing in this period. The period extends from 800 B.C. to 300 A.D. H/o Dh. Vol. V. 1., p. 484. Diksit marks the Vedāṅga period from 1500-500 prior to the Śaka Era. Bhāratīya Jyotiṣaśāstra p. 139-140.
200. H/o Dh. V.1., p. 579.
201. Bifurcated from the next one on the criteria of Rāsis and Weekdays Bhāratīya Jyotiṣaśāstra, p. 139.
202. Mīm. Sū. I. 3. 3-4.
203. Nīrukta 31.14.
204. Arthaśāstra II. 20.
205. Manusmṛti I. 65-67,69-70.
206. Bhāratīya Jyotiṣaśāstra, p. 103, 107.
207. Śāṅkarabhāṣya on Brahmasūtra 3.1.2,8.
208. Śābāra Bhāṣya 4.3.27.
209. Yogasūtra II. 13.
210. Manusmṛti III. 68-69, Viṣṇusmṛti 58. 18-25.
211. Tantravārttika I.3.29.
212. Gītā 3.8., 18. 5-7.
213. Manusmṛti XII. 88-89.
214. दैवम् एव परम मन्ये, पौरुषं तु निरर्थकम्। Rāmāyaṇa I. 57.21.; Mahābhārata 2.52.18, Also Diṣṭa (appointed way) Mbh. 2. 51.25, 2.52.14.
215. एवम् पुरुषकारेण विना दैव न सिध्यति। Yāj. Smṛ. I. 247.
216. Saṁvara is the stoppage of new Karma by means of austerities thereby is expressed as a cause of liberation (Sarvadarśana-Saṁgraha 15.23.). Also by means of Nirjarā or destruction of accumulated Karmas through austerities. Uttarādhyāyanasūtra 29.12.16.
217. Majjhimanikāya 20.60.
218. On retributive rebirths, Majjhimanikāya 135; gati in various lokas Uttarādhyāyanasūtra 3. 3-4.

219. Majjhimanikāya 149.150.
220. Makkhali Gosāla in Dīgha II. 19.20.
221. ĀpŚS. v.3.2-20
222. ĀpŚS. vi.1.2.
223. ĀpŚS. i-iii.
224. ĀpŚS. viii; vi. 4.7-9.
225. ĀpŚS. xiv. 8-12.
226. ĀpŚS. iv. 6,7.,xi 2.5.
227. ĀpŚS. xx.;
228. Jyeṣṭhā (Pāraskarasūtra 2.16), Also ĀśGS 3.5; ĀśGS.- 2.1.1.
229. II. 8.18-20.
230. Dikshit includes Ātharvaṇa-Jyotiṣa in this period. It has week days but no zodiac signs, also carries the roots of the further developed Jātaka branch. Bhāratīya Jyotiṣaśāstra p. 99.
231. नक्षत्रदेवता एता एताभियज्ञकर्माणि। यजमनस्य शास्त्रज्ञैर्नाम नक्षत्रजं स्मृतम्।। JV (RV) verse 28.
232. Yāj. Smṛ. I. 180.
233. ĀśGS I. 17.1, 4.1.; Manusmṛti II. 30, 36; Yāj. Smṛ. I.14.
234. ĀśGS i.10.5., ĀpGS.vii.17.
235. ŚGS. i. 25.5, PGS. iii. 2.3.
236. HGS i.17.3
237. ĀśGS III. 7.7.
238. BDS ii. 8.14.9,10.
239. ŚGS V.11.10.
240. ŚGS V. 6; KāŚS. 25.11.20.
241. Arthaśāstra II. 24.
242. राहुकेतू यथाकाशे उदितौ जगतः क्षये। Karṇaparva 87.92.
243. Śārdulakarṇāvadana 61,62.
244. Yāj. Smṛ. I. 306. BDS ii. 5.9.9.
245. Yāj. Smṛ. I. 349.
246. Rāmāyaṇa 2.19.16,19,20,22., Mahābhārata 13.6.47.

247. Mahābhārata 12.217,32,33,45,53., Gītā 18.61.
248. Gītā 3.5, 4.13, 18.41.
249. Bhāratīya Jyotiṣaśāstra, p. 34.
250. Manusmṛti XII. 54-69.
251. Gītā VIII. 26.
252. Śāntiparva 26. 8-10; Yāj. Smṛ. III.197.
253. Brahma Purāṇa 217. 37-110.
254. Bhāgawata Purāṇa II. 5.34.
255. Padma Purāṇa II. 81.48., 94.118, 94.13,15.
256. Utpala on Bṛhat Samhitā 45.4, Also Veṅṛisamhāra II. 15.
257. Bhāgawata Purāṇa III. 32.38.
258. Ādipurāṇa IV. 37.
259. Bṛhat-Samhitā (I.7.) on the line of Śvetā. Up. VI. 1.
260. Weekdays were derived by Indians from the Chaldeans or the Greeks, between 100 BC to 100 AD. History of Dharmaśāstra, V. 1, p. 679,681.
261. The History of Indian Literature, p. 263.
262. Apte 403; also as spread /stretch, as cosmic man spread similarly bhāva of individual.
263. Vāyupurāṇa 31.42.
264. Padma Purāṇa II. 94.2-3.
265. Brahmavaivarta Purāṇa II. 24.17.; Mārkaṇḍeya Purāṇa X. 64.
266. Skanda Purāṇa III. 2.5. 15-16.; Mārkaṇḍeya Purāṇa 92.15.; Caraka Samhitā IV. 1.116.
267. Padma Purāṇa II. 94.14., Viṣṇu Purāṇa VI. 5.50-52.
268. Viṣṇu Purāṇa VI. 7.73, Kurma Purāṇa I. 31.30; Brahmavaivarta Purāṇa IV. 1.4-6.
269. Vasantarāja Śakuna Chap. 17, verses 1-22., Bṛhadyogayātra XIII. 110; Mārkaṇḍeya Purāṇa 40. 1-33. Caraka Samhitā Chap. 12.
270. Brahma Purāṇa 21. 23-24.
271. Adbhutasāgara I. 6., Vasantarāja Śakuna 20.7., Nimitta of Bhadrabāhu Chap. XIV., Bṛhadyogayātra 23.1.

272. Viṣṇu Purāṇa III. 11. 118-119 define parvans, also Br. Saṁ. ii. 113 on astrological portents of parvans.
273. Viṣṇupurāṇa VI. 3. 11-12.
274. H/o Dh. V. 1. p. 693, 695; Time reckonings in the Nārada Saṁhitā III. 1-2; Also commentary of Śaṅkarācārya on Vedāntasūtra II. 1.36.
275. Viṣṇudharmottara Puraṇa I. 72.7.
276. Sārāvali X. 116., Br. Jā. II. 5-7, 8-11, 12, 14.
277. Caraka Saṁhitā I. 25. 1-15, III. 3.29.; IV. 1.116.
278. Brahma Purāṇa 29.61.
279. Viṣṇudharmottara Purāṇa 71.86.
280. Br. Saṁ. Chap. 98., Nārada Purāṇa I. 56.133-135., Bṛhadhyogayātra III. 1., Ratnamāla II. 7-9., XIII. 2.
281. Ratnamāla X. 15.
282. I. 85.56.
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Chapter IV

Constructive Survey of the Correlation of Jyotiḥśāstra and Karman

A. Central Theme and Hypothesis

1. Composite structure

The correlation depicts a composite form with an all encompassing growth in the literature. It admits the concepts of divinations and Ṛta following from an Indo-European parentage inclusive of the nature and light deities which later molded in a native form.

Prayers and oblations to these deities through the medium of sacrifice though a common aspect of the ancient cultures, the transformation of Ṛta into Dharma and the formation of a Nakṣatra system with a setup of exclusively Vedic deities is essentially a composition of a cultural transmutation.

With the emergence of the single original principle, Brahman as the cause, the correlation worked to conjoin the various components of the perceptible world, the effects of the invisible Brahman, depicting its form and action. More so, on the molding of Daiva, a novice in the Upaniṣads and later a central disposition in the rebirth of man, dealt with in the Smṛtis various measures synthesized through the correlation and which are yet prevalent.

2 .Kinds of Correlation

The interaction of Karma and Jyotiḥśāstra occurs in five types in the overall literature.

i) Predictions regarding Future from Cosmic Actions (Divinations)

Interpretation of human and cosmic future with Śakuna as a means occur in all phases of the literature though their importance appear to be declined in the final phase. Inferring future from spontaneous cosmic actions was the form in the early stages whereas predicting future became more organized with induced divination

ii) Rectificatory Actions and Jyotiṣa

Śānti rites performed for counteracting omens occur very early in the literature. These were performed for happiness, to avoid mishappenings, the means being prayers to Gods, Nakṣatras, Grahas (AV.19.9). These rites were especially believed to be effective to negate the mistakes committed during the sacrifices. In the post Vedic period Navagrahaśānti came to be performed prior to all Saṁskāras. All such actions were performed on auspicious times and were presumed to appease and reverse the evil aspects. ¹

iii) Actions performed on Muhūrtas

Ritual actions necessitated auspicious times for their performance. Sacrificial actions as Darśapūrṇamāsayañña were prevalent since pre-Vedic times which were based on the positions of Sun and Moon, the concept of specific times for sacrificial actions an accepted dogma in the period of the Brāhmaṇas, whereas till the Vedāṅga Jyotiṣa, Jyotiḥśāstra was established as “the science of determining times for the purpose of sacrifices”. ² Sacrifices were arranged on the orderly succession of times, the *‘knowledge of sacrifices’* being closely knit with the *‘knowledge of times’* with reference to the Sun, Moon and the Nakṣatras.

In the post-Vedic, the Saṁskāras were to be performed on specific times, therefore the correlation existed in the form of Muhūrtas for the performance of Saṁskāras and in later times to compute Pañcāṅgas for Dharmaśāstra purpose. The Gaṇita branch worked exclusively for these causes.

iv) Vision of Past Actions

In the Upaniṣads where the individual Soul (Jīva) and his destiny became one of the chief topics of consideration, various means were employed for reading the impressions of past actions on Jīva with the aid of Jyotiṣa. Present birth itself being a Karmavipāka (fruition of past actions), the concept of future in the present birth essentially came in a restricted sense as being fated due to the effects of the past actions as an emblem on the Jīva in the chain of the former births.

Reading of the Prārabdha by means of the Rāśi of birth by the system of Horoscopy and computing the position of planets for the casting of horoscope for the same was a development after 2nd c. AD.³

Śakuna came to be considered as a means of reading of past actions in the period of Garga, Yavana, Vṛddhayavana, Varāha and Kalyāṇavarman and often both spontaneous as well as induced means of divinations were prevalent to read the effects of past actions for which the entire cosmos served as a screen.⁴

Tracing the path of transmigration of the soul after death of the present body on account of past actions, and locating the stations of the soul from death to rebirth, with the aid of motion of cosmic light bodies was also a topic of consideration of the correlation.

v) Non-Action and Jyotiṣa

The unity of the Individual Soul with the cosmic one being the final note of the Vedic philosophy, the correlation shows signs of development to this extent. On part of the Doctrine of Karma, the Upaniṣads and the later philosophy markedly distinguished action from non-action, action being the chief aspect of this world whereas non-action the very base of Brahman and its counterpart, Ātman. Bifurcation as to the visible light forms serving as the symbols of Brahman for its identification being the basic form of Jyotiṣa, demarcating the qualityful from the qualityless, for practical application and efforts to excavate the cosmos for such a purpose also appears to be a trait of Jyotiṣa. Desire, being a factor for such a division is an early expression⁵ though in a different terminology. Prajāpati the singularized cosmic form of desire is declared to be mortal as well as immortal and sacrificial actions on his joints for immortality is a regular practice in the Brāhmaṇas. In the Upaniṣads, with morality as their base, the philosophy progressed towards exclusive human orientation, a desireless state of mind being a prerequisite for the purpose of release. Though this development laid a solid foundation for the doctrine of Karma with its moral aspects, its correlation with Jyotiṣa, the cosmic counterpart here after appears in a somewhat severed fashion. Subsequently the principal Philosophical Systems, the Sāṃkhya, Nyāya and Vedānta and later the Bhagawadgītā give consideration to the

cosmic angle for the purpose of unity thereby the correlation seem to possess some undeciphered quarters to this extent.

3. Central theme: Human and Cosmic Future

Vision and shaping of future of man and cosmos constitute the central theme of the correlation of Jyotiḥśāstra and the concept of Karman in the literature.

The initial Veda is already aware of spontaneous cosmic actions in the form of Śakuna divulging the future, more organized is the idea of future in the concept of auspicious time for performance of ritual actions in accordance with a specific future. Thereby along with interpretation of spontaneous cosmic actions, the order in cosmos brought forth by the light bodies on which cosmic time is based is the study in chief for the knowledge of future. The essential difference being, whereas the moment of manifestation of the spontaneous divinations let know about future, the ordered concept of time for performance of ritual actions show an organized study seemingly, a gradually developed one for a complete prior knowledge of cosmos and its actions on the basis of which human actions were arranged for shaping of an ideal future.

The idea of future gets more complex in the further stage, as the idea of unity with the Supreme Ātman approached. Apart from being abstract as future being non-perceptible to the senses, the idea of future itself nullified as the state of unity being a state beyond Time of which future subserved a counterpart and mental actions more than physical efforts made it attainable through the tool of knowledge which ultimately led to the point of Release.

In the later parts of the literature, the correlation traces the past of man and thereby his future tendencies as believed to be dependent on his past actions, manifesting at the time of and by rebirth. Though the reading of past actions, form a major part of the correlation of the post-Vedic period, the purpose behind it seems to be essentially the reading of future with the aid of a certain point of time manifesting a certain prognostication, the looking into the past actions a mere gesture to derive an idea of the probable future, the specific character of the divination brought forth by the Time point providing a window to peep in as a connecting joint of the chain of

ones actions, which shape-up the journey of his soul, also Prārabdha a concept of '*partly manifested future*' in this manner continued till the point of Release.

From such assumptions as, 'the law and order of the cosmos is a truth', 'Man and Cosmos are interdependent' also 'human is a product of the cosmos', man's future necessarily relates with the cosmos in accordance with the culture which strengthened the basis of the correlation, whereas 'human future' believed as a creation or product of his own actions for which cosmos served as a parent body, the information about cosmic actions became the fundamental ingredient which was to be gathered and arranged in an orderly sequence as to make accessible to human understanding a knowledge about its future. To this extent the natural order Ṛta is already a flourished concept in the initial Veda yet study of the kārmic patterns of the cosmos and arrangement of human actions in accordance is a regular practice throughout and displays a disposition for a work on definite future a willful one at that.

Also the efforts starkly represent an indigenous form of the correlation in erecting the theme of future amongst the mutations of foreign cultures from Babylonian, to Greek, Chinese and Arabic on part of Jyotiṣa alongwith the native growth, in contrast to the local doctrine of Karman.

4. Extent of Future in the Literature

The expanse of future finds an expression in the Cosmogony of the Veda and later literature.

a) Cosmos

i. Origin and Destruction of the Cosmos

Ṛgveda ascribes the origination of world to a single principle mentioned as 'Tad-ekam' (RV.X.129) or Puruṣa (RV. X. 90), though 'Kāla' of which future is a division appears as the first principle in the Atharvaveda⁶ Atharvaveda also mentions Kāla as the creator of Prajāpati identifying Skambha, with Prajāpati (AV. 10.7,8) as the creator and supporter of all worlds. The Taittirīya Saṁhitā recurrently mentions Prajāpati as the creator⁷ inscribing the idea of the world subjected to creation.

In the Brāhmaṇas, ritual actions are performed on the ‘Timed form’ of Prajāpati for attainment of a specifically desired future. The connection of ‘desire and action in present for a certain achievement in future applied to Prajāpati in Śat. Brā. (VI. 1.1) desirous of progeny practiced tapas out of which Brahman was created.

The Upaniṣads limit and extend the concept and the field of future by referring Kāla as one of the sources of creation⁸ and simultaneously render superior the creator, the ‘efficient cause’ as beyond the three times.⁹ Thus, the absolute Brahman is the creator, preserver and destroyer of the bhūtas (being and / or ‘elements’)¹⁰ its form of Brahman, the fundamental cause is inclusive of both the active and the inactive world and is connected with and beyond future.

The concept of single creation expressed in the early Upaniṣads is replaced by the idea of a periodical dissolution and recreation of the universe by the creator (Śvetā. Up. 5.3), being encouraged for such an activity by the actions of the soul¹¹ making the nature of future of cosmos a temporary process and also secondary to human actions.

ii. Cosmic Future

Cosmic future carries dual perspectives as the nature of cosmos is of brilliance as well as darkness. The idea of future eulogized in the Veda and later literature pertains to the bright aspect of the cosmos and is traced by the luminosity, truth and order in the cosmos.

To such an extent the region of heaven located in cosmos is a region of light inverse to the idea of hell which is full of darkness and is to be avoided.¹² The idea associates the deity Bṛhaspati, born of the light of heaven and the dispeller of darkness, initially paralleled with Agni and later the prototype of Brahma (neuter)¹³ sharing a significant connection with the constellation Tisya (Tai. Sam. 4.4.10.1) and in the post Vedic the planet Jupiter linked with luck. Earlier RV. X. 88.15 mentions the two paths and the region where the whole world that moves reaches whereas later Brahman, the self-illuminated absolute entity is said to reflect in all cosmos and is to be reached by the visible light forms as its expressions. Future, is also defined in the ‘order’ of the cosmic light forms initially as the order of the anthropomorphized

deities who followed a fixed path laid down by themselves (Vrata) the notion descending from Ṛta, the cosmic order and evolving as Satya¹⁴ which is later equated with Dharma.¹⁵ The concept of cosmic future can be termed as of complex character, the multiplicity on account of the varied possibilities of human approaches to it.

b) Human

i. Origin and Structure of Human

Man is believed to be a product of nature, his origin traced from the original single principle (RV.VIII.58.2), Puruṣa (RV.X.90) and also Viśvakarman (RV.X.81,82) who fashioned the world. RV. (I. 96.2) places Agni as the progenitor of man. Tai.Sam VI. 5.6.2 makes man a descendent of Vivasvān Ādityaḥ. Prajāpati (Tai. Sam II.1.2.1) and Kāla (AV.XIX. 53.10) are also mentioned as the creators of man.

The Upaniṣads speak about the immortal ruler residing within all beings (Br.Up. III.7.15) as the creator of and identical with all beings (Ait. Up. I. 1-3) while Manu-s from whom human race came forth are creations by mind of the single principle.¹⁶ The Caraka Saṁhitā (I.25.1-15) mentions various theories of origin of man and diseases of which Karma is one of the cause.

Tai. Up. II.2-5 express the five layered structure of man, underneath which is the Ātman, the individualized cosmic one, embodied yet a knowing subject and unchangeable.¹⁷ In contrast to the Ātman, human form being subjected to the action world is equipped with 'senses' which collect the impressions of the external objects, the 'mind' which synchronizes them and the 'reason' to discriminate them, activity in sense of dharmādharmā (righteous and unrighteous action) is inherent in mind and reason. Man is subjected to transmigration¹⁸ on account of this activity and in accordance with the variety of the Karmāśaya which determine the Jāti (life and form of existence), Āyuh (life span) and Bhoga (experiences whether happy or unhappy)¹⁹ the soul has to undergo in one embodiment or many depending on the *Vāsanās* or Kārmic residues.²⁰ The future of human in the culture is conceptualized with the working of the above factors.

ii. After Life

Owing to the Karmāśaya, the Jīva transmigrates due to his Karma being an important doctrine of the theory of Karma thereby bodily death is not absolute in the literature. In the early phase, the souls of the good passed to Yamaś heaven of light (RV. X. 14.10) whereas later the soul returned with rebirth in favourable conditions as a recompense of his good deeds though in broad terms the notion of ideal future comes in two perspectives, ‘in existing life a prosperous one with hundred Autumns’²¹ and ‘Heaven and Immortality after bodily death’.

iii. Causal Components of Human Destiny

Future of present life is a slight affair as compared to its relevance with innumerable lives of the Jīva. It is in this perspective that the concept of Daiva (destiny) chiefly occurs. Variable acts due to individualized desires bring specificity in the forms of existence.²² Human action is considered the basic cause of formation of destiny along with other causes as an aggregation.²³

iv. The Ideal Goal

The aim of human existence according to the culture, in the Saṁhitās and Brāhmaṇas is expressed as becoming identical with the gods²⁴ the idea finds an expression in the path leading to the gods and heaven as their abodes for the achievement of which ritual actions were performed. In the Upaniṣads the highest object is union with the Absolute, reaching the realm of Brahmā which is beyond good and evil deeds²⁵ and attained by Knowledge.

The dual way of thought reflects in the Systems where the injunctions of the Mimāṁsā coinciding with the Saṁhitās and the Brāhmaṇas proclaimed a life linked inevitably with actions whereas the Vedānta connect with the Upaniṣads approving the Brahman world as the ultimate truth.

In the linear flow of the literature, Swarga, an activity bound future become a temporary plane of achievement for man from which on exhaustion of goods deeds he had to return to earth. In an even later stage, Svarga, the region, became a condition of mind²⁶ taking a more impermanent form. Mokṣa, a state of permanent release remained a priority dependent on the moral side of actions.

This being the extent of cosmogony inclusive of both Cosmic and human factors the idea of future in the literature, chiefly comes in two viewpoints

Firstly, “Future is not only a division of time but is *a notion utilized for improvisation of the present status of human existence* in accordance with the cultural ideology.”

Secondly “Future is *action oriented* and is dependent on the activity in the perishable world and *through the moral nature of actions extends to the imperishable plane.*”

5. Problem Statement and Hypothesis

In an early stage, human future is deciphered from the cosmic actions with divinations as the source of information. In the post-Vedic period, remnant of human activity of some distant past. *daiva*, formulated the future of man conveyed by the cosmic bodies. Simultaneously, the cosmic future came to be studied with the aid of activity beginning at the Kalpa and Yuga. Here cosmic actions formed a ‘*sign language*’ conditional to manifesting at a certain point of the time telling about future.

On the other side, the study of *proper times* for performance of ritual actions served as a ladder to a desired future inclusive of present and after life. The belief that human actions on specific times could enhance the quality of future equally the decoding of cosmic design for such a purpose is evident early.²⁷ Such instances declare that Veda was aware of certain cosmic points which connected Jīva to other planes or states of existence.

Role of active action shuffles on cosmic and human side in the above instances while connecting with future. Also *actual shift or motion* is a presumption at every interaction which leads to future. Vision of the transmigrating Jīva or motion claimed to the Jīva on performance of ritual actions though being referred to in the literature the event underlying the seat of interaction leading to the presumptive shift finds mention nowhere. More clearly, along with man and cosmic actions it is the assumed ‘strength of the moment’ which causes the change. Though such an importance of time in connection with actions is reported often in the literature yet the

phenomenon at the interaction is veiled. There lies activity here in the sense of Karman, Kriyā or perhaps is inclusive of almost all permutations and combinations enclosed with $\sqrt{\text{kr}} (8 \text{ U.})^{28}$ on account of the innumerable interactions and their probable outcomes, being decisive of the shift or the further motion and has an evident connection with Time.

Even in the Upaniṣads where the nature of actions turn moral and with the human authority of reconstructing oneself,²⁹ the series of events which change the ‘Human-Form’ leading to the ‘Brahman-Form’ involves activity pre-supposedly in the presence of Time,³⁰ the mechanism of which is nowhere distinctly expressed.

Finally, the stage of Release as an ultimate unity with the Supreme Ātman pre-supposedly involves a final motion evidently not from the Jīva or the human side, the structure than reached beyond intellect and not possessing activity beyond intellect thereby perhaps in terms of activity has a cosmic side to it. The role of Vedāṅga Jyotiṣa here in the final stage of activity is in question. Cosmic actions in the form of Śakuna, a means of arriving at a definite knowledge³¹ and also providing the knowledge of time for the purpose of sacrifices³² qualified Jyotiṣa as a Vedāṅga, with cosmic light objects as a source of perceptive knowledge of Brahman. Vedāṅga Jyotiṣa has a connection with light and knowledge, which appears almost severed in the Upaniṣads and the later Philosophical texts whose subject matter deals with the above form of man and cosmos. On such an account the question arises that does Vedāṅga Jyotiṣa possess a role in the final shift which results in the ultimate knowledge form?

The *problem* evidently lies in the phenomenon actually involved in the change. The ‘activity’ underlying the events or episodes occurring at the man cosmic interaction which brings a change in human form is the subject of study. The problem statement concerns with the nature of this activity and the role and extent of Vedāṅga Jyotiṣa in the underlying mechanism.

The problem is important for from any such event or a series of event ‘Transformation’ as an outcome is the claim of Veda and the later literature.

The study to such an extent implies not only the belief of the Vedic men in the workings of such a phenomenon but also a certainty that they were perhaps aware of the mechanism of the underlying event at the seat of Transformation. Though the culture claims the utility of the phenomenon yet the literature is silent except a few here and there on its functioning part stating as to what happens in the event which decides the course of Transformation.

An *hypothesis* which can be proposed regarding the mechanism of any such event is that the Activity here is '*Derivation of Knowledge*' from the Interaction where Action (Karman) is a comprehensive term, Knowledge equals with light and Vedānga Jyotiṣa is a device to such a Knowledge.

B. Nucleus of the Correlation and the Role of Jyotiṣa

1. Nucleus

The interaction of Jyotiṣa with Karman in the literature rests on an ideological foundation. Effectuating the ideology 'in perception' and 'in practice' is the core of the correspondence in the culture.

i. Idea in Perception

The study of Jyotiḥśāstra is designed by the culture to get a vision of future. The concept of future in Veda pertains to a near one attainable in present life as a long and prosperous one whereas the idea of a distant future to be achieved after the death of present body exists in the form of achievement of heaven or immortality. The highest object of the Vedic religion was to restore the bond between man and divine.³³ Future being abstract, its expression being preliminarily ideological, Jyotiṣa subserved to provide a physical basis to the idea.

Initially the simply formulated conception of future connected the dark and bright quarters of the cosmos to the ideas of fear and delight. The ideas of auspiciousness and inauspiciousness find expression in the form of spontaneous cosmic actions, the divinations, which throw a light on future. Darkness is a condemned idea since beginning in the literature as opposed to brightness which is

equivalent to auspiciousness or even divineness. The Vedic deities thereby portray light in their names, forms and actions, the sacrifices eulogize the fire element and for the fulfillment of expectations related to future the brilliance of cosmic light forms and their paths are pursued. Mind is very early represented by the Moon in the physical cosmos and later on the moral side, Sattva is the form of Mind. Brahma, the ultimate truth is also of the form of light represented by the light in cosmos.

ii. Idea in Practice

The concept of Time from the very beginning in the literature is associated with the luminaries due to their orderly motion contrasting the characteristics of the cosmos as Day and Night, the bright half and dark half of Months, the Full Moon and the New Moon leading to finer divisions of time as thirty Muhūrtas in an Ahorātra and to deeper extent providing a physical basis.

Qualitative Time

Apart from being physical, Time is ***qualitative*** in the literature. Deciphering of the Cosmos as Eclipses being caused by a demon is an early observance³⁴. Its Astronomical explanation occurs in the Pañcasiddhāntikā³⁵ besides a Philosophical³⁶ and an Astrological one³⁷. Eclipse as a representation of Tamas in cosmos is subjected to rectificatory actions³⁸ on part of human, indicating action relative to ideology with its varied interpretations rather than to the physical fact. Time, thereby is a bringer of the qualities of the cosmos subjected to ideological interpretations and actions thereupon dissected ***characteristically*** rather than materially.

Implementation of ideology with usage of qualitative time occur in instances such as action performed on the motions of the Sun and Moon and the later on the joints of Prājāpati for a desired future and even later for the performance of Saṁskāras.

In the post-Vedic period, qualitative time as a pointer to future is evident in the Siddhānta texts³⁹ calculating the beginning of a Kalpa as a space of time for predicting cosmic future. Calculation of the 'Lagna' as the birth point in an horoscope to determine the quality of life of an individual is also an instance.

Qualitative time determining the qualities of the cosmos is used by the culture to fulfill the ideology about future, ritual actions performed on such 'specific' or 'proper' time was believed to be leading to the fulfillment of their ideals.

The nucleus of the correlation lies in '*perceptive knowledge*' regarding the ideology acquired from cosmic light forms the ideas brought in application through '*qualitative time*'.

2. Jyotiṣa : A Device to Knowledge

Cosmic material viewed with a specific ideology of obtaining perceptive knowledge regarding human life and its journey, a tendency to connect the visible nature to the abstraction to this extent and giving it a perceptive form occurs since early period.

i. Spontaneous Cosmic Actions

The initial development of unwinding the cosmos to understand the future of man by way of Śakunas continued till late.⁴⁰ The former nature of Śakunas as spontaneous natural phenomena revealing the future later advanced to every perceptible form of cosmic matter being treated or even scrutinized as an omen.⁴¹

ii. Order of Satya and Dharma

Ṛta, a pre-Vedic concept displaying the physical order in cosmic activity is converted into 'Satya' and later into 'Dharma' in the culture.⁴² The wheel of Ṛta is observed in RV and AV⁴³ as bringing forth the order of cosmic forms represented by the day and night, the phases of Moon, the seasons (Ṛtus), the year (Saṁvatsara) and so forth. An entire representation is evident in Puruṣa (RV X. 90) and Hiraṇyagarbha,⁴⁴ the knowledge is applied to the rituals. In later literature, order is displayed in the concepts of Yuga and Kalpa.

Knowledge of sacrificial system.

The sacrificial system in Veda rests on the knowledge of the days, months, seasons, years. Sacrifice and year are established as synonyms, the action connected to the order in cosmos. The arrangement represented the (symbolic) motion of the

Sun, the Sattras were the imitation of the Sun's yearly course.⁴⁵ More elaboration occurs in the form of sacrificial horse (Medhya Aśwa) connected to the cosmos.⁴⁶

iii. Cosmic Light Forms and Human Life

The luminaries subserve the purpose of perceiving the ideology of human life. Sūrya is concerned with the lengthening of life.⁴⁷ He represents the Ātman of the Kālapuruṣa (RV, X.90) the conception continues in the later Philosophy, an account of its brilliance expressed in terms of a simile comparing the illumination of the entire cosmos by the singular Sun to the entire body by the Ātman.⁴⁸ Moon addressed as Candra, Candramas or Mās in the RV denotes a bright body as well as a measure of time.⁴⁹ Moon receives light from the Sun is known in the Saṁhitās.⁵⁰ He is the distributor of years (RV. X. 85.5) and as the mind of the cosmic man appears since late RV.⁵¹

The practical philosophy⁵² is evident in the idea of the path of the gods made visible by the motion of the Sun in the Northern hemisphere⁵³ and the way of the fathers (Pitṛs) located by the Southern motion of the Sun,⁵⁴ more specified to the pitṛs by locating the inlet between Agastya and Ajavithi.⁵⁵ The stations of the Devayāna and their counterpart, of the Pitṛyāna are distinctly expressed⁵⁶ amongst which Moon is one of the temporary resorts. The Sun and the moon are made the doors to the heaven, the Dawn and the Sun are the reaching places of man after death,⁵⁷ the Dawn is also made a seat of the fathers (pitṛs)⁵⁸

The ideology of imitating the light forms and immortality of the deities reflects in the coalescence of soma juice with Moon being addressed as Soma. The term Soma is applied to Moon in the RV,⁵⁹ earlier elsewhere Soma is the juice consuming of which made the gods immortal⁶⁰ and also the men.⁶¹ Moon is referred as the soma cup of the gods, the waxing and waning of the Moon accounted as the filling and emptying of the Soma (juice) by the gods,⁶² the soma nature of Moon established in the later, Maṇḍala of RV.⁶³

The integration further advanced in the Brāhmaṇas where Moon is the Soma of the gods.⁶⁴ In the Upaniṣads, Moon or king Soma is the food of the gods, consumed by them.⁶⁵

In case of transmigration of Jīva, Moon is a station of the souls, their arrival fills up the Moon,⁶⁶ from the Moon the two paths diverge,⁶⁷ also the whole of the transmigrating beings reach the Moon⁶⁸ in the bright half and they come back to be born in the dark half. The idea of the entire moving world reaching the Moon is a continuation of the earlier notion of the moving world reaching the region between father (Heaven) and mother (Earth) in the later RV. This place being the Antarikṣa and Moon is placed in the Antarikṣa is mentioned earlier.⁶⁹ In making Moon, the abode of the transmigration existence from where his further course is decided lies the vision of the then developing *moral theory* the expression further continues with the Astrological connection of the individual being born with specific characteristics of the Nakṣatra in which the Moon is placed at the time of birth which gave an idea of the nature and accordingly the presumptive future of the individual.

An early evidence to this extent lies in RV. II. 40, a hymn addressed to Soma-Pūṣan stating Soma as the cause of production of all worlds and Pūṣan (a form of Sun) as the one who marks or oversees the actions of the whole world.⁷⁰ Soma further developed with the Moon-Mind connection with desire the root cause of creative activity and Pūṣan with Sun-Ātman and Karman.⁷¹

More evident are the threads of a *moral theory*, finding an expression in the character of Varuṇa, the lord of the moral order. Varuṇa is the firmament of the sky⁷² the idea of attributing a moral nature to the sky being exclusively Vedic. Earlier the lord of light,⁷³ in the Tai. Saṁ. he shows a connection with night with the Sun as his eye and his spies are distinctly mentioned who behold the two worlds, are wise and descend from the heaven.⁷⁴ Also the world Ātman shows a connection with Varuṇa.⁷⁵

Prajāpati represented the ideology with a physical basis. His form being mortal as well as immortal, he coincided the year (Samvatsara), actions were to be arranged on his body parts.⁷⁶ Also Agni served the physical basis on whom the entire sacrificial cult is based.⁷⁷

iv. Nakṣatra System and Characteristics of Man Cosmos

The Nakṣatra system in Veda is designed as to provide a perceptive as well as a practical basis to the ideology. Systematic study of the characteristics of the

Nakṣatra, coinciding with earthly objects⁷⁸ and phenomena divulge an attempt of Vedic men to obtain a complete understanding of the cosmic material and its workings for the purpose of discerning human life.

The belief that the Nakṣatras are the abodes of gods⁷⁹ and pious men⁸⁰ and that one who performs sacrificial actions in this world reaches the world of Nakṣatras⁸¹ reflect in the practical utility of the Nakṣatras in the religious system. Obtaining the knowledge of Nakṣatras on the path of the Moon coinciding them with time, merging of the Vedic deities with the Nakṣatras for the purpose of worship and above all bifurcating their characteristics in auspicious and inauspicious ones for the performance of actions⁸² such interpretations provided a physical basis for the sacrificial calendar in Veda and the Muhūrta branch of later period.⁸³

The study continues till later times correlating the qualities of cosmic matter specified by the Nakṣatras and the substances (on Earth) thereby ruled by the twenty seven Nakṣatras⁸⁴ and the Nakṣatras indicating the body parts of Kālapuruṣa continue upto Bṛhat Saṁhitā.⁸⁵

The initial thought that actions on specific Nakṣatras lead a man to heaven⁸⁶ and later in Jātaka branch the characteristics of a person being judged on the Nakṣatras of birth indicate the knowledge of the Nakṣatras acquired by the culture to understand the human form and also the deciphering of the cosmic qualities for their utilization in establishing the man cosmic relationship.

v. Rāśi, Horā and the Knowledge of Past Actions.

The study of the divisions of the cosmos in the form of Rāśi is latter to and more imaginary to Nakṣatras.⁸⁷ Rāśis are systematically classified⁸⁸ for actions, they specify places and objects dominated by them⁸⁹ yet as a unitary whole they appear in the Horoscope the Indian counterpart designed for the knowledge of past actions⁹⁰ and the relative future. Horā is a synonym for consideration of what the destiny would be⁹¹ and for *Lagna*⁹² as well. It coincides with *Prārabdhakarma*.⁹³ The *Lakṣana* (characteristics) of the *Lagna* (Rāśi arising at the eastern quarter of the horizon at the time of birth of an individual) coincide with the bodily form of the individual is an observed fact.⁹⁴ Such a form is acknowledged as a manifestation on account of the

past actions of an individual. The Horā branch by means of study of characteristics of cosmos makes an effort to give a vision of the past actions which formulate the destiny of man.

vi. Metaphoric means to Knowledge.

Viewing of cosmic light forms and their physical actions to find an ideological explanation in the expression is a common practice in the culture. The shapes of the Nakṣatras are associated with myths, the motions of the light objects are the actions of the anthropomorphized deities and in the phenomenon of eclipse initially a demon according darkness to Sun⁹⁵ and later with Sun as a metaphoric representation of the soul the event serves as a *motion picture* of the soul in the process of acquiring true knowledge.⁹⁶

Nakṣatras are the *āyatana*s (abodes) of the gods⁹⁷ and later *Puruṣadeha*⁹⁸ an *āyatana* of the gods for the invisible Brahman, the Sun and Moon serve as pratika (symbol) in the sat (visible) world.⁹⁹

vii. Real Knowledge and Cosmos

Brahman is Satya (real) and not metaphoric.¹⁰⁰ Efforts to reach to such knowledge with Jyotiṣa as a device occurs in the literature and excavation of such cosmic points is evident. The emergence of activity from the fundamentally quality less Brahman due to desire is the point of origination of the visible world.¹⁰¹ The plane of Satya which is a permanent one is bifurcated at this level from the perishable and thereby illusionary world of names and forms.

While the invisible Brahman is light itself in the visible world the light or illumination is due to the Sattva guṇa displayed by the Sattva forms of Prakṛti¹⁰² the quality of Sattva is characterized by the light and order in the cosmos. The ordered motion of the cosmic bodies for instance the Sun and the Moon serve as metaphoric knowledge of Brahman in the perishable visible world. On the other hand the beginning of creative activity¹⁰³ demarcates the unmanifest and the manifest serving as a junction of the Brahman world and the Karman world. Any such point of manifestation of cosmic activity can thereby be presupposed as an above mentioned junction equally the emerging activity can be termed as occurring due to desire (of the

gods).¹⁰⁴ Also the point immediately prior to the beginning of activity can be said to be a non-active and illumined point as belonging to the Brahman world. Reference to such points of perception placed at the beginning of or manifesting of activity are utilized for the knowledge of future concerned with that particular activity occurring in the form of Śakunas inclusive of spontaneous cosmic actions or induced ones as Lagna or Kalpa calculated by Gaṇita.

viii. Cosmic Moment: A Window to Past and Future

Also any such point receives an identify as a witness at the junction of the two states, possessed with a quality of perception serves as a ‘cakṣu’ an eye to view the future of the activity beginning or manifesting at that point.

Time being a concept understood on account of activity,¹⁰⁵ it being experienced on account of the changes occurring in the matter forms,¹⁰⁶ its existence known by apprehending the changes or transformations occurring in an object or a thing,¹⁰⁷ the moment of manifestation of activity serves as a silent spectator keeping a record of that activity. This being confined to the manifestation and disappearance of activity due to the limitations of visibility of human senses,¹⁰⁸ or else the eternality of time is known to the culture.¹⁰⁹ In both these senses any moment of time or as a whole Kāla (Time) appears as a means of Pratyakṣa (Perception)¹¹⁰ being a surveyor to the changes occurring in the states of matter serving as a window to past and future.

ix. Time Moment as a Sign

The mutual dependency of activity of objects and time as to the change in the solid bodies understood due to Time¹¹¹ and that the objects manifest in accordance with the motion of Time¹¹² is utilized in the culture as to infer the past or future motion of any object viewed from a certain point of Time.¹¹³

Any moment of time in the above sense is a ‘*sign*’ and Śakuna thereby is synonymous with ‘Nimitta’ in the literature.¹¹⁴ Jyotiḥśāstra through any such time moment or through the motion of time constituted a sign language deciphering the activity of the cosmos from which an attempt to read future was a practice prevalent in many ancient cultures.¹¹⁵ The distinguishing feature of Jyotiḥśāstra as compared to other cultures is that, being a Nimitta, a prognostic sign or a *Liṅga*¹¹⁶ it is utilized in

the culture to serve as an antecedent cause inferring about the actions of man and thereby his future discourse or 'Gati' made dependent on his own actions which can be coined as the '*Liṅgī*' to be inferred. Thereby the texts conveying the interpretations of cosmic signs were designed to convey about actions.¹¹⁷

x. Knowledge of Gati and Stithi of Jīva

The Saṃhitā and Jātaka branches are based on the motion of light bodies¹¹⁸ elsewhere this motion of light bodies is utilized to infer the motion and position of Jīva.¹¹⁹ The motion of Jīva is a result of his own actions according to the literature. Any motion as a verb is a sign.¹²⁰ Time in this sense of motion declares the activity of Jīva, the doer. Jyotiṣa provides only the vision of the action based motion of the Jīva. In this sense Jyotiṣa is instrumental to the actions of the Jīva thereby deterministic in showing the motion of Jīva. Gati (motion) as fate¹²¹ seemingly arrives from this quarter in the correlation.

xi. Knowledge by Perception

Jyotiṣa in above sense works as a *nimitta* to provide perception in the following manner

~ By the light forms and their orderly motion, which form the body of Jyotiṣa, the unmanifest Kāla becomes Pratyakṣa.¹²²

~ By the motion of light bodies Jyotiṣa as an eye provides a proof of existence of the imperceptible Jīva and its motion beyond body.

~ By the knowledge of signs, it serves as a perceptive means of knowledge of 'action and its outcome' from which Jīva receives 'knowledge by perception'.¹²³ Ultimately it served the purpose of a Dṛṣya.¹²⁴

In the above senses Jyotiṣa is a perceptive means to knowledge.

xii. Motion as Movement

The motion of time is compared to a vehicle, all worlds are said to be the wheels of Time.¹²⁵ Kāla being a Nimitta Karaṇa,¹²⁶ the aforesaid motion is an acquired motion on account of activity of some basic ingredient which serve as the Upādāna, the material cause. Such instances as 'Time is the source of matter'¹²⁷ represent Kāla as an instrument which by its motion gives a name and form to the basic ingredient.¹²⁸

Time is thereby a weaver or a potter and it is the quality of the matter which decides its name and form, whereas the quality of time is apportioning of the attributes and moulding and manifesting them in appropriate name and form an account of its force of motion.¹²⁹

Motion (of time) is ‘movement’ due to this mutual dependency. Time being qualitative this motion or movement¹³⁰ vary in accordance with the qualitative activity. On the other hand, origination of activity pertains to the relativity of motion of time and qualities of objects. On this account time is said to be the creator of beings.¹³¹

The above property of time reflects in its representation as a ‘Nimitta’ in its other sense,¹³² which is utilized for the performance of actions. It is in this context that Manu mentions Utpāta and Nimitta separately.¹³³ Jyotiṣa as ‘Kālavidhānaśāstra’¹³⁴ appears in the literature specifying Time as motion in two senses

In one sense, it provides a ‘*perceptive medium*’ with cosmos as a screen for vision of human actions and its probable fated discourse.

In another sense it provides ‘*specific time*’ to perform actions on account of which an ideal future is exercised.

In the above senses Jyotiṣa is a Device to Knowledge by means of Cosmic Actions.

C. The Knowledge and Derivation of Form

1. Jyotiṣa and Karmavipāka : The Knowledge of Form

i. Gati as Vipāka

Gati (motion) of Jīva is due to the past actions on account of which Jīva transmigrates.¹³⁵ Punarjanma (Rebirth) thereby is a function of Karmas (actions) which are believed to be the womb (yoni) of various beings maturing in various ways.¹³⁶ Karma varies in accordance with the qualities therefore gati also varies on account of qualities (Guṇas).¹³⁷ Karmagati carries a sense of binding in such instances.

Bondage of actions also involves the bondage of time since the maturation and fruition (vipāka) of actions depends on time.¹³⁸

The fruits of action differ in accordance with the time of maturity thereby their consequences vary depending on their time of maturation.¹³⁹

ii. *Karmavipāka and Kāla*

Gati here is in sense of transmigration where Karma means past actions or daiva (accumulated karma) and Kāla is the force connected with the fruition of actions. Karma and Kāla are considered the causative factors for the repeated rounds of birth and death of Jīva.¹⁴⁰ Future thereby in case of Karmavipāka automatically carries the angle of fate¹⁴¹ where the unexhausted Karma about to ripen become the 'nimitta' (efficient cause) of the production of the new body and the circumstances surrounding it. Karma along with Kāla constitute this activity,¹⁴² the Pūrvakṛta (good or bad actions) being the cause (hetu) of the fruition in the form of Jāti, Āyu and Bhoga.¹⁴³

iii. *Vipāka : The Manifestation of Prārabdha*

Fruition (Vipāka) is connected with the Prārabdhakarma, the term inclusive of release of past actions and the beginning of creative activity in the form of 'manifestation'¹⁴⁴ and thereby subjective to the above conditions.

The phenomenon is three phaseal Kriyā, Upacaya and Vipākaphala.¹⁴⁵ In the process active Karma further leads to its accumulation or deposition possibly thereby is termed as material¹⁴⁶ and is represented in a seed form¹⁴⁷ the nature of the accumulated Karmas identified as '*rūpa dharma* derived from the Mahābhūtās'.¹⁴⁸

This in the process of manifestation or the unfolding of the Prārabdha leads to a form which has a semblance with the past actions. Form or shape is thereby in accordance with the convictions¹⁴⁹ and actions of the past. Body form and mind of the present accords with the previous body form and mind and is a derivation of past actions is declared by Āyurveda.¹⁵⁰ Thereby form at birth conduct or character of a person is a product of his past actions.¹⁵¹ Even the intellect is in accordance with the past actions and is involved in Karmavipāka.¹⁵²

Of the qualities, Rajas and Tamas are said to cause the ‘contact’ or transmigration of the soul,¹⁵³ the sphere of Karma extending beyond body¹⁵⁴ is expressed in the ideas of paths leading to different planes by force of one’s actions.¹⁵⁵

iv. Vipāka by the Gods

In the literature the authority to perform actions is of man.¹⁵⁶ Fruition of actions (Karmavipāka) is accounted as for by the gods. The deities are subordinated already in the Saṃhitās and Brāhmaṇas as being responsible for the fruits.¹⁵⁷ In later stage, Prakṛti is held responsible for conduct which is a fruition of actions.¹⁵⁸ Also Svabhāva (Prakṛti) is said to be technical and not the creative authority and thereby does not accept the merits or demerits of anyone.¹⁵⁹ Karmavipāka thus in the literature is projected as a mechanical law operating in the cosmos. An element of slavery in the form of daiva is depicted in it on account of the binding to actions which are in accordance with the inherent tendencies of the Prakṛti.¹⁶⁰

In the process of fruition¹⁶¹ the accumulated action which is presently stagnant is a motion released in some distant past, this comes in contact with the external forces¹⁶² resulting in manifestation and further activity. That which manifests and comes in motion is the ‘quality or the characteristics stored in the form of a potency’.¹⁶³ Form is thereby ‘bhāva’¹⁶⁴ in the sense of ‘coming to life’ or ‘birth and growth’ or else ‘being and becoming’.¹⁶⁵ Since that what is Bhāvya (is happened or capable of happening) and that what becomes sat (vyakta)¹⁶⁶ or manifests is the stored quality which comes to life with the motion of time aided with other relative factors. This potential of ‘quality’ resulting in action in the sense of manifestation in the process of Karmavipāka is in accordance with the Theory of ‘Satkāryavāda’ of the Sāṃkhya Philosophy.¹⁶⁷ On which is dependent the ‘Gati’ and thereby the plane of existence along with the ‘form’ of manifestation.¹⁶⁸

In the process of Karmavipāka, past actions thus manifest by means of motion in a ‘form’ or shape and the time of manifestation of a form as a fruition of past actions is made a subject of study for the relevant future.

Knowledge is derived from Cosmic Actions by the further criteria:-

Cosmic motion is a pointer to the perceptive knowledge of man's past actions their fruition manifesting in a 'form' divulging the past actions as well as the future.¹⁶⁹

Any manifested form as a fruition of past actions as a visible evidence leads to the insight that any action leads to fruition in future and is in accordance with the quality of that act.

Further, if every action leads to fruition, fruition being a cosmic response, 'willful proper actions' on part of human can be utilized to design the future with appropriate cosmic time with such a notion actions are arranged on specific times by the culture.

2. Jyotiṣa and Karman : Heaven and Sattva form

i. Actions determine Future

Performance of actions was deemed essential for the determination of future since early times. Actions were supposed to create certain potency which produced results in a distant future after the death of the body. Atharvaveda refers to the soul following iṣṭāpūrta in heaven.¹⁷⁰ The Upaniṣads believed in the role of desire, will and actions in the formulation of future of man.¹⁷¹ Br. Up. (4.4.5.) mentions the becoming of an individual dependant on his actions. The Chān. Up. III. 14.1. explains that future is in accordance with the determination (Kratu) of man. Later to the Upaniṣads the thought prevailed that man's own actions, his work and conduct led him to his future existence in the form of rebirth. The transmigration of Jīva individuated in accordance with the quality of the desire. Actions thereby produced results both ways as auspicious or inauspicious being decisive in determining the further motion.¹⁷² The motion or gati following dharma or adharma differentiated on account of the quality of the 'Adṛṣṭa'.¹⁷³ Whereas earlier the existence surviving after the bodily death was believed to keep on moving by its inherent power (Svadhā),¹⁷⁴ later the force of man's own past actions came to be believed as the source of his link with future.

ii. Karma as Puruṣārtha

Action is principle in the culture. The term Karma chiefly comes in the sense of actions prescribed by the Veda and the related authoritative texts. Prescribed actions are 'actions proper'.¹⁷⁵ Initially, the sacrifices became a source of such actions. In the Brāhmaṇās, Yajñakarma was declared as the highest form of Karma (act).¹⁷⁶ Sacrifices promised longevity, immortality in heaven (Śat. Brā. XI.6.2.5.). Reward of religious works was heaven,¹⁷⁷ an abode shared in union with the gods, who were believed to reach immortality by the aid of building up a fire altar.¹⁷⁸ Agnihotra on specific times was a required Karman.¹⁷⁹ Sacred works were essential for casting off Punarmṛtyu.¹⁸⁰ They were believed to change the course of nature,¹⁸¹ and were rectificatory resources as well.¹⁸² Ritual actions for release from Karman were also employed.¹⁸³ Other than sacrifices Veda prescribes actions in the form of prayers and oblations, śāntis, vratas also moral deeds all as meritorious actions. Prescribed actions are primarily categorized in two divisions, action as Karma which keep in the chain of creation and action as knowledge which leads to release.¹⁸⁴

iii. Actions on the Order of Times

Prescribed actions were arranged on the order of cosmic time brought forth by the order of cosmic forms. Sacrifices were arranged on the motion and positions of Sun and Moon in specific Nakṣatra. Ṛta displayed the cosmic order of forms, Agni as Vratapati,¹⁸⁵ Varuṇa as the guardian of Ṛta and thereby of the cosmic and the moral order or the order of the qualityful Brahman represented in the order of cosmic light bodies, these and such instances demonstrated the study of knowledge of the order of the forms brought forth by cosmic time. Whereas statements such as the motion of Moon in the circle of the Nakṣatras¹⁸⁶ certain Nakṣatras and seasons deemed fit for ritual actions,¹⁸⁷ or sacrifices being arranged on the body parts of Prajāpati equalled with Saṁvatsara, exhibit the importance of the knowledge of the practical utility of time, specific actions performed on which were deemed favourable for human future.

iv. Kāla and the potency of Karma

The actions performed on specific times created a potency which fructified by the motion of Kāla. The reference to creation from sacrifice or attainment of desired

things by means of action comes from this corner. The potency 'Apūrva' is said to reside in the individual, its fructification occurring after a lapse of time. The action leading to such a potency comes from 'आर्थिभावना'¹⁸⁸ inclusive of the idea of Swarga brought into being by means of performance of sacrifice. Actions here in form of sacrifice though principle and Swarga though the reward of sacrifice, the lapse of time lying between the performance of action and its result and that which necessitated the introduction of Apūrva¹⁸⁹ is an equally important factor. Kāla is the force connected with the fruition of action, manifesting it at a distant future and therefore represents a verifiable link between Karma and its consequences. Therefore, the injunction of Veda, 'one desirous of heaven should perform sacrifice',¹⁹⁰ is inclusive of the role of Time in bringing the idea in actual practice of which 'performance of sacrifices' on the 'order of times' is one part.

Of the other part of role of time of bringing the consequences of actions in manifestation, which is a sector of Karmavipāka, the term manifestation or perception sometimes comes in a restricted context as to limited to the human perceptive faculty of the organs of sense. This development presumably post-Vedic brought forth the role of time connected with the vision of the 'pūrvakarma' the past actions of man. Also, time as the force connected with the fruition of actions, is a cause for the manifestation of the present form, where the motion of time is the manifesting force whereas the quality of the actions is responsible for the form. Since the performed actions in the form of a potency has a tendency to retain in the individual, any manifested form is an admixture of variety of actions of the past which presently have come to fruition. Thereby alongwith 'Apūrva' the potency restricted to Yajñakarma , the Systems also mention 'Adrṣta' which is complex of both dharma and adharma and which together constitute the Karmāśaya of which Prārabdhakarma is connected to the present form.

v. The Quality of Jyotiṣa

As a means for release from the Karmāśaya, Yogadarśana suggests the performance of proper actions at ones own free will performed in present to destroy the sorrows surfacing in the future.¹⁹¹ This expression is in continuation with the

concept of future exhibited by the Veda. Veda prescribes actions for the fulfilment of desires¹⁹² to be performed in present, which fructify in a later period of time and non-fulfillment of which may lead to sufferings in the future.

Whereas in the post-Vedic period, Jyotiṣa is instrumental to assume the past actions and the relative future from the presently perceptive form of an individual, in the Veda proper prescribed actions on specific times performed in the present is mentioned as to lead to a desired future, whose fruition for instance in case of heaven and immortality is an action potential fructifying in a different 'time' and 'plane' of existence than the present one while the actions are performed. Jyotiṣa, as a Vedāṅga, as the eye of the body of the Veda along with providing presently perceptive time points derived from the motion of the light bodies to perform actions also provide a vision of the imperceptible planes to some extent through the anthropomorphic forms. But what really establishes Jyotiṣa as a Vedāṅga is that it created an awareness amongst the culture regarding the 'importance of actions performed in the present' their future recompenses as acquisition of Swarga and the rest though on an assumptive basis yet carried the authority of the Veda. More so along with the force of the motion of time according to the Upaniṣads existence travelled in accordance with the 'quality' of the deeds¹⁹³ on which depended his manifestation in various planes in the future which is a derivation in practice earlier. Veda akin to this line of thought based on specific times derived from the cosmic design as to leading to such paths and planes which defined the quality of 'Sattva'. Actions performed on which in due course led to the manifestation of the existence in the 'Sattva plane' of cosmos than entitled as Swarga.

vi. Sattva : The Form and the Plane of the Deities

In bringing the ideology in practice for reaching the plane of Swarga, actions were arranged on the motion of light bodies specifying the form of deities who were assumed to reach the plane earlier. The (apparent) motion of the Sun showed the path to the gods and heaven.¹⁹⁴ The two paths bifurcated on reaching the Moon (Chān. Up. V. 10.2,4,5) , the performers of sacrificial actions went by the path of the gods.¹⁹⁵ The thought is expressed later in Gītā (IX.25) that those who praise the deities merge in

them. The motion of the Devanākṣatras also specify the path from South to North.¹⁹⁶ Moon well posited in the Nakṣatras is an important criteria for the performance of ritual actions.¹⁹⁷ Gargasāṃhitā mentions actions to be undertaken at specific times.¹⁹⁸ That these actions though varied lay prominence on Sattva, the predominance of which claimed birth amongst the gods in the heaven.¹⁹⁹ This coincides with the earlier idea of pious men of this world becoming Nakṣatras in the heaven and where Sattva equates with 'Puṇya'.²⁰⁰ Swarga and immortality, the spheres of Sattva or light being achieved by the deities specifying light²⁰¹ are to be accomplished by means of prescribed actions. Swarga is reached after such actions.²⁰² There are prayers for immortality,²⁰³ the ultimate form designating brilliance²⁰⁴ blending with which gelled the idea of light and immortality.²⁰⁵

Out of the two paths, release is only by the path of light, the Devayāna, which is lighted throughout and is attained gradually.²⁰⁶

vii. Sattva : the Inborn Disposition

As to why the Sattva forms of cosmos were being selected by the culture to subserve the ideology of Swarga and immortality, Sattva is declared as being, nature, natural character or the inborn disposition.²⁰⁷ The Sāṃkhyas while explaining the fundamentals of the universe explain Sattva as being light and buoyant.²⁰⁸ The light forms in the nature are thereby the symbolic representations of the Sattva quality in the cosmos.²⁰⁹ Sāttvika state is believed to be the most perfect state of Prakṛti and alongwith representing the quality of light the 'order' of the visible cosmic light forms is also a representation of the 'order or discipline' as a quality of Sattva.²¹⁰ Along with the study of the cosmic light forms, the order of the light forms is also a subject matter of Jyotiṣa.²¹¹ Actions arranged on time points defining the Sattva in the cosmos and its order can thereby be assumed as the ones leading to the Sattva planes.

On the other hand whereas Rajas and Tamas are mentioned as dissimilarities²¹² Sattva is equable, the natural disposition and thereby a permanent state. The Sun and the Moon, the cosmic forms of Sattva, thereby do not destroy in the pralayas, the cosmic construction and its reversal confined to the modifications and not to Sattva

which is being²¹³ is also an expression indicating the permanency of the quality of Sattva.

The plane of Sattva is permanent or imperishable compared to the perishable world of names and forms. The Sattva plane and the gods residing there already existed though in their primeval age while the manifested world (sat) emerged.²¹⁴ Sat here meant 'developed' primordial to which is the Asat or 'undeveloped' though unmanifested or imperceptible yet inclines 'existence' or 'being'.²¹⁵ Activity here is present in a dormant state which at a later point differentiates.²¹⁶ Such instances expressed the quality existing in unmanifest form and manifesting on account of activity.

viii. Sattva as Knowledge and Light

Sattva is equated with 'knowledge' as well as 'light'²¹⁷ and is thereby the plane or state of knowledge and light. Sat is therefore permanent in the sense of 'Knowledge' or 'Truth' on the other hand Brahman, the source of beings, is self-illuminated and the ultimate form of Knowledge.²¹⁸ The Parābrahman is connected to the permanent plane and to some extent to the plane of Sattva in which reflects the initial concept of Swarga. The boundary bifurcating this plane from the perceptible 'name and form' world is declared to be the boundary of 'desire' or of 'time'.²¹⁹ Above this boundary is the Parābrahman which swallows or absorbs Kāla.²²⁰ Below which is the perceptible world in which the cosmic light forms initially anthropomorphize the deities and later represent the self-illuminated Brahman.

ix. Sātvika Actions and Heaven

Actions arranged by the Veda on their performance claim to transcend this boundary of desire and time leading from the visible perishable world to the more permanent plane of swarga. Prajāpati the cosmic form of desire as well as time was created for actions to fulfill desires by means of sacrifices. The Sun and the Moon on whose motion actions were arranged received their light from Brahman and were in the visible world representations of the non-visible Brahman.²²¹ Rather in the later period, the objects of Sattva as the effects of Brahman come to be the possible projections of the intelligence of the Brahman on account of their light forms.²²²

Performance of ritual actions led to light.²²³ Such actions led to the predominance of Sattva which resulted in a rebirth connected with knowledge and purity,²²⁴ the state of Sattva as consequential to motion in higher plane for instance Swarga²²⁵ and above all knowledge arised from the quality of Sattva,²²⁶ with such expressions Sattva is believed the transmigrating element carrying to the plane of Swarga. On this account perhaps actions are arranged on cosmic time specifying Sattva for a desire of heaven performance of which created an action potential the fruition of which was believed to manifest the existence in the plane (or state) of Sattva by the force of time.

x. Unit in human

If cosmic time is a cause for performance of actions connected with Sattva, it is the impressions of any such act which is allied with its fruition in future. The 'impression' coupled with 'Time' link the 'actions with the result'. Creation of such impressions as implantation of Sattva with aid of actions and time is termed as 'Saṁskāra'. It is a means employed by the culture to induce 'Dharma'. Thus 'Saṁskāra' is defined as that which makes an object fit for a purpose.²²⁷ Also termed as Anuśaya or Vāsanā which is explained as the knowledge derived from memory.²²⁸ In this other sense Vāsanā or Saṁskāra is accumulated action believed to be the root of Bhava.²²⁹

The object on which these impressions are inscribed is mentioned as '*Citta*' by the literature.²³⁰ In human form the vibrations of the Citta are declared as decisive of his motion inclusive of transmigration and transformation.²³¹

xi. Sāttvika Citta

The inherent tendency of Citta being Sāttvika²³² also on account of its quality to apprehend forms, actions on the cosmic light forms²³³ representing Sattva and its order can be said as a means to bring the contact (saṁyoga)²³⁴ of the Sattva in cosmos with the operating Citta of the seer. The qualities of knowledge and light which are the basic attributes of Citta due to its inherent Sattva form are enhanced, such repeated efforts ultimately lead to the state of Pratyāhār.²³⁵ Though here the organs of sense come in contact with the gross forms of nature. Eye, the principle behind forms

(rūpa)²³⁶ as one of the five organs of knowledge or perception, the quality of which is apprehending rūpa or form is a product emerged out of the Sattva aspect of agni (rūpa-tanmātra).²³⁷ Eye becomes the cause for the apprehension of the cosmic satva forms heading to the impressions of Sattva on the Citta. Such a Sāttvika Citta is a means for achieving an auspicious form on account of its flow or rate of motion accelerated due to the release of the inherent Sattva due to appropriate time and actions.²³⁸

The earlier idea of reaching the plane of the deities with the aid of sacrificial work on appropriate Time which held a moral angle in the Upaniṣads deciding the becoming of man in accordance with his deeds ultimately in the systems declare the functioning unit in man in which the potency of works resided and which provided the necessary motion which landed his existence in the higher plane. The physical nature of ritual actions while transformed into moral ones, the 'planes' acquired on account of actions converted into the 'states' of existence. This was an offshoot of the concept of 'Rebirth' of the Upaniṣads which landed the soul on the same plane to enjoy or to suffer the fruits of his merits or demerits of the earlier births. Later in the Systems this exchange of 'planes' into 'states' is a clear formulation. Thereby according to Śābara the word Swarga alludes to happiness.²³⁹

Sāttvika Citta can be said to be an affair of Jyotiṣa on account of its inherent 'light' and 'knowledge' and due to its eligibility for transformation. In human form it 'is to be acquired' since human is an evolute of 'Rajas' in nature.²⁴⁰ On account of which desire born out of Rajoguṇa²⁴¹ reside in the human apparatus constituting the senses, the mind and the reason. Desire is considered the root of activity,²⁴² which makes action productive²⁴³ and further lead to their accumulation which retains in man in a seed form.²⁴⁴ Man originally belonging to the immortal world declined to the mortal world on account of desire is the foremost presumption of the culture. Subjective to this thought actions are arranged by the culture for the upliftment of man to his original abode and on which rests the Philosophy of the Veda and the later literature.

Jyotiṣa as a practically working system of the Veda carved the form of Prajāpati mentioned as the first seed in the Ṛgveda metaphorically representing ‘desire’ in the cosmos.²⁴⁵ Actions performed on which fulfilled the desire for heaven and for the immortal or light form.

3. Jyotiṣa and Karman : Knowledge Form

i. The Point of Bifurcation

Later to the above development, whereas desire in human became the edifice for the succeeding moral theory and the overall philosophy, Prajāpati, its cosmic counterpart is literally a severed off connection in terms of morality though whether Prajāpati really had any such connection remains an enquiry. This point of bifurcation of Jyotiṣa from the Philosophy of the Veda at its very beginning run parallel in the literature with a few intersections of the two.

The emergence of Brahman as the original principle in the Upaniṣads²⁴⁶ on account of its imperceptibility to human senses necessitated perceptible means for its understanding. This requirement appears to be fulfilled by the cosmic objects of light and their order as representations of Brahman. In the Ṛgveda Karma finds a definition while explaining the creation of the sat (manifested) world as the creative activity from which the visible movable and immovable world emerged from the Asat (unmanifest).²⁴⁷ The cause of this creative activity is declared as the ‘*īlā*’ or the desire of the Creator to evolve,²⁴⁸ from which the active world of deeds resulted. The quality of light since being ascribed to the originally qualityless Creator named as Brahman or the Creative Ātman in the Upaniṣads from which the qualityful world emerged, the order of the cosmic light forms came to be recognized as the ‘work’ or ‘activity’ of the creator himself. Though actions based on the order of the light forms was a practice much prior to the emergence of the qualityful (Saguṇa) Brahman, the difference as that they being the metaphors to the qualityless Brahman occurs later. The earlier study of the qualities of the cosmos was specified by the deities, the Nakṣatra system and even the ‘Timed form’ of Prajāpati on which actions were based and which constituted the process of conversion of Ṛta into Dharma. Subsequently the

cosmic light objects and their motion represented the 'desire' and the 'deeds' of Brahman. If this transference of qualityless cosmos to qualityful differ Karma in form as to making perceptible the 'Karmayoga' of the creator, it also transformed Jyotiṣa which initially was of a form of direct perception and which later to this become the metaphoric means to reveal the 'desire' and 'work' of the Creator as Sattva in Cosmos.

Sattva on moral terms came to be defined as a quality. On account of which the plane of heaven where the deities resided became an impermanent one. The desire of Brahman released as Sattva in the cosmos, though exhibited light and knowledge of Brahman, they displayed only a part of the light and knowledge form of Brahman and not as a whole.

ii. Equable Nature of Sattva

In case with human, basically belonging to the Brahman world, his form being emerged out of the Rajas in the Prakṛti, the individuality in his shape and intellectual faculty is accounted to the Rajas, Tamas and the past actions.²⁴⁹ Thereby Sattva representing the light and knowledge of Brahman which inheres in human form or Jīva is a basic property and which is also a part of Brahman. In terms of relativity it is therefore a state of 'equilibrium' or 'equability' with the part form of Brahman. Cosmic activity of Sattva represented by the order of cosmic light objects is utilized to bring order in the cultural activity, inclusive of physical as well as moral one. If the calculations of the Gaṇita branch deal with the physical counterpart of time the work on the disciplined activity of cosmos to bring equability with the Sattva form of Brahman which is a moral counterpart. If work on the ordered rhythm of cosmic Sattva is proposed to create vibrations of Sattva on the qualitatively throbbing Citta, equilibrium with the part form of Brahman or the release of Citta being a propensity, such a result of the induced cultural activity reflects the Philosophy of the Culture as an *intellectual* one. More clearly it can be termed as **“A morally activated philosophy aimed at an equable unity with nature.”**

Apprehension of forms is qualitative on account of the organs of sense which perceive the object in the presence of mind.²⁵⁰ If the variety of names and forms is due

to the analytical aspect of mind in contact with the organs perceiving the gross forms, the 'cakṣu' (organ of perception) and the 'rūpa' (apprehended form) share a common origin in the element of fire (teja), extending the unity to an elemental equability pertaining to the entire cosmos. Such equability is displayed by the cosmic gross ordered light forms alongwith the innate nature of mind which makes it a fundamental unit carrying the immortal light²⁵¹ its nearest equability achieved by the state of Sattva.

iii. Knowledge of the Unmanifest

Extending beyond the manifested qualitative world and residing as immortal light in man and the entire cosmos is the unmanifested form of Brahman. Efforts to understand this form of Brahman is through the theory of Kalpa, Yuga, Mahāyuga and Manvantara. Such earlier efforts to measure the distance to Brahma is expressed in the literature²⁵² and is a continuation in the later period where the form of Brahma is asserted in extensive time periods.²⁵³ This 'Timed form' of Brahman though at an unmanifest level of human understanding the form is active at the cosmic level. The construction and destruction of the cosmos is explained in terms of the 'Ahorātra' of Brahmā constituting his day and night at the joints of which the beings manifest and unmanifest.²⁵⁴

In reality Brahman as a single principle beyond the manifest and the unmanifest is beyond space time and causality. It is also termed as *nirguṇa* (qualityless) Brahman and is cited in the Upaniṣads.²⁵⁵ Knowledge (Jñāna) identified as the state of becoming Brahmībhūta or merging in Brahman pertains to this form.²⁵⁶ Also the texts explain that the 'realization' of Brahman creates oneness with Brahman.²⁵⁷ This equable status with the qualityless Brahman is recognized as 'Knowledge in its ultimate form'.

iv. Sāttvika Knowledge and the Role of Intellect

On the other hand, Jīva being a part and parcel of Brahman his permanent form is mentioned as beyond desires, of consciousness (cidrūpī) and is all pervading since fundamentally singular.²⁵⁸ In its purest state it realizes Brahman, the realization itself an attribute of knowledge. This form of knowledge pertaining to the

fundamental element is the knowledge of all names and forms.²⁵⁹ In this ultimate form the perceptive diversity is supposed to disappear.²⁶⁰ This state itself is the state of Brahman which though uniform originally appears divisional on account of the variety of forms of beings.²⁶¹ True Knowledge is therefore defined as that by means of which one views the uniformity amongst the diverse forms and ‘perception’ finds a definition in such a mode of Knowledge termed as ‘Sāttvika or synthesized Knowledge’.²⁶² In human such a Knowledge is a property of the faculty of reason.²⁶³ The form of reason or intellect is through which the *seer* who is himself a witness receives vision of the outer world.²⁶⁴ Thereby modifying the intellect to an equable or stable form which is the original form of the Jīva as well as Brahman is the form of Knowledge to be acquired by the reason for the unity which is the fundamental percept of the philosophy of the culture.

v. State of Equability in Cosmos

Apart from the named and formed qualitative cosmic matter which undergo change in character,²⁶⁵ the literature talks of the non-qualitative form of the cosmos which is its fundamental non-modificatory state.²⁶⁶ The concept of eternal Time is perhaps concerned with such parts of cosmos as also the qualityless form of Brahman expressed as space.²⁶⁷

Search of non-activity representing steady points in the cosmos amongst the visibly active cosmos finds mention in the literature. An early practice is the observation of the fixed star near the Sun.²⁶⁸ Also to such extent the beginning of activity from a fixed point as solstice is recorded.²⁶⁹ The Sun stands still for a moment at the point of culmination is also an observance.²⁷⁰ The Nakṣatra at the Equinox not swerving from the East is a topic of study.²⁷¹ Equally important was ‘Viṣuvat’ in the Vedavedāṅga period.²⁷² Viṣuvān day is mentioned as the soul of the year²⁷³ believed as the day on which the gods raised Āditya to heaven. The method of derivation of this day is a special mention in the Vedāṅga Jyotiṣa, whose chief aim was calculations of the parvans for sacrifices.²⁷⁴ These *parvans or junctions in between the two moving cosmic objects could be representations of homogeneity in cosmos* since they are the expressions of the gap in between two specific activities along with the

end of one and the beginning of another activity. Sacrificial actions on these parvans lead to heaven and immortality is a statement of the Veda indicating these joints as openings to another world and in the later period they are deemed to be termed as outlets to the qualityless Brahman on account of their non-activity.

vi. Lakṣana

Such a point expressing non-activity also finds an expression in the explanation of the effect of 'Lakṣana' specified in the literature. Amongst the variety of effects occurring on the cosmic matter,²⁷⁵ Lakṣana extends from the absolute end of the qualities of a prior condition up to the arising of a new quality to its fullest extent leading to a certain state²⁷⁶ thereby it is a conjunction of two different characteristics. Any such point can also be said to be designating the point of disconnection since lying in between the qualitative separation. Such a point if dissected is supposed to divulge a non-activity area, also a timeless one being qualityless where to the complete transformation occurs.²⁷⁷ Search of such points which are non-active or where activity begins in the cosmic design are specified above, the search of which is a subject matter of Vedāṅga Jyotiṣa.

As of otherwise the term Lakṣana is commonly employed in the literature in its meaning as a 'prognostic sign' or a 'distinctive mark'²⁷⁸ indicative of future which is studied either from a certain manifestation or more systematically from the beginning of a certain activity in cosmos. Yet if viewed as one of the 'effects' faced by the 'beings', Lakṣana exists as a natural process occurring spontaneously in case of beings as a response to external stimulus. If qualities inhering in a being 'surface' on such an interaction with the external factor as of 'cosmic time' which is said to bring forth the 'resultant of work' interacting with which a specific quality surfaces in a being, 'knowledge' brought forth as another counterpart of cosmic time presupposes an interaction with that part of knowledge which is residing in the being.²⁷⁹ Such a point of contact with Knowledge may be a connecting link to the qualityless Brahman, also specifying the end of Karman. Jyotiṣa from the above discussion secures a place at the *threshold of work and Knowledge*, any such threshold *as the point of perception of the arising activity and its outcome*. The light for the vision is

a provision by the qualityless vacant point. Lakṣana in its sense of implied meaning²⁸⁰ at this point of state can be said to be a representation of Jyotiṣa as an eye of the Veda and equally the state of Parābrahman.²⁸¹

vii. Eschatology of Karman

The Eschatology of Karman in cosmos can be said to be at any such boundary defining non action and action. The non-active area is the point of perception or knowledge equally defining the area of the end of Karman bifurcated by the boundary from which activity arise. The concept of uncompounded, homogenous and unchangeable Brahman is seemingly applicable to such a point non-connected with actions.²⁸² Such points in cosmos can be said to be the opening to the state of release.

Gītā (II.53) indicates to such an opening at which a steady reason rests in order to acquire a state of Yoga.²⁸³

viii. Dream State

In case of Jīva dream state is a natural means for a vision of the light form of the Ātman and the arising activity is of the reason acquired on account of past actions.²⁸⁴ The Upaniṣads talk about the dream state (svapna) as one of the states of the Ātman.²⁸⁵ In a dream, the Ātman staying at the junction surveys the effects of merits and demerits in its own light.²⁸⁶ The flow of activity of the reason is said to be by means of ‘*Akrama*’ displaying ‘confusion’ or ‘want of order’ and is the outlet by which the activity moves out and the Jīva views the next world.²⁸⁷

Dreams form a part of Śakuna section of Jyotiḥśāstra so as to give a vision of the past actions and thereby the knowledge of the concerned future. On account of its spontaneity it eludes from any human intervention as Muhūrtas yet it carries an inborn disposition to prove the quality of Jyotiṣa as the cakṣu of the Veda apart from its established affair as the vision of past actions. On the authority of the Bṛhadāraṇyaka Upaniṣad on the theory of the dreams cited above, a dream as a Śakuna while it is happening is a live presentation of the experience of the light and knowledge form of the Ātman inclusive of its steady form and also of the motion of the intellect. Dream as a Śakuna is a perception of the above factual truth. Thus dream is also a

visualization of the bifurcation of non-activity and activity and thereby a representation of the bifurcation of the areas of knowledge and action.

ix. Point of Transformation

Such a point of bifurcation stated above seemingly allows Transformation. If such a point specifies the arising of an activity as of the confused intellect connecting it to the world of motion, it also beholds the world of knowledge. Such a point thereby can be deemed as an outlet to the world of release. It sub serves as a natural providence for the derivation of knowledge.

Jyotiṣa as a cakṣu is a prognostication to this point as a basis of transformation. If dream as a divination is a spontaneous means for such a vision, the time points derived by Vedāṅga Jyotiṣa to perform actions locating non-activity or equability in cosmos could be deemed as specifying transformation.

x. Derivation of Knowledge

The path of transmigration of Jīva is dependent on conduct in the literature. The cosmic design is excavated to such an effect as to provide knowledge about the morality generated path since Ṛgveda and actions are arranged in accordance with it.²⁸⁸ The transmigration of Jīva from one birth to another is compared to the motion of a leech,²⁸⁹ the relation in between the two characterized forms, inclusive of the forms accounted to the desire of the past leading to such a fruition.²⁹⁰ Karma as a remnant of desire accords with ignorance which is proposed a cause for the contact (Sañ-yoga) between the observer and the observed. Though such a contact deems to be a natural arrangement since each and every action leads to a fruition for which such a contact is conditional eventually leading to the realization by the self of its own form,²⁹¹ the fact apart that such a knowledge derived by the Ātman is a sectional study on part of the culture. Since amongst the two types of actions,²⁹² those that promote release of the Ātman from the cycle of rebirths are the ones concerned with knowledge. Actions kept the Ātman in transmigration and in contrast freedom from death was to be achieved through knowledge.²⁹³ Liberation meant the absence of adṛṣṭa,²⁹⁴ which was form of karma as opposed to knowledge. The knowledge of the rite held a connection with the cosmic cycle connected with actions the study of which was a subject of the

Brāhmaṇas.²⁹⁵ Yet the knowledge it incurred was ‘object oriented’ which was subjective to transformations in contrast to the knowledge of the Ātman. Also such a knowledge was a prerequisite for the unity with the supreme Ātman, since an actual knowledge form was achieved as an aftermath of such a knowledge.

Actions to be undertaken to obtain such a knowledge finds mention in the literature,²⁹⁶ though non-contact with the objective world of activity remain the basic criteria of any such action. Knowledge or realization being a concern of the intellectual faculty of human as also non-contact with the empirical world were to be achieved by means of control of senses and concentration of mind more so by the isolation of the organs of senses and the mind.²⁹⁷

The Ātman, a witness and without modifications and as the one subjected to the outer world in accordance with the faculty of its reason thereby an ‘equable status’ of reason also is a prior most concern to such a knowledge.²⁹⁸ Ultimate form of knowledge or release explained as an absence of dualistic difference of Ātman and Brahman such a form of knowledge where the diversity drops, is an acquisition by the means of reason, the state of union (yoga) being achieved by the priority of a ‘steady’ reason.²⁹⁹

The initial form of the interaction between man and cosmos is an interaction between their qualityful aspects where Jīva equipped with instruments as body, mind and reason actively interact with the Prakṛti and its evolutes. Amongst the qualityful interaction knowledge is an attribute of the Sattva constituent of cosmos, work on which is a subject matter of Veda.³⁰⁰ Though for a complete knowledge form which can be declared as a state of ultimate release specifying unity with Brahman, along with actions suggested for such a form, the ‘eventual act’ where to the Jīva obtains the total knowledge form following a state of equable reason is a final interaction with the cosmos and thereby an affair of Vedāṅga Jyotiṣa and the concept of Karman.

xi. Knowledge Form

The being and its experience is a part of knowledge on which depends the future or that which is about to happen. Ignorance believed as a cause of such a state and its series which brings contact with the objective world leading to unhappiness,

the destruction of bhāvas constituting empirical knowledge³⁰¹ is the way suggested by the culture for a total knowledge form. If organs connect with the knowledge of form related to the world of Karman subjected to modifications of which originates the activity world on part of both the cosmic and the individual constitution (Prakṛti), the actions in favour of release are inspired by the Ātman. Synthesized or unified knowledge is an attribute of Ātman and such a knowledge constitute a knowledge of time and space which are kinds of name and form. If Jīva is name and form of Brahman broken in by time and space,³⁰² the knowledge of time and space in a unified form is essential for the knowledge of Brahman. Such a knowledge is a consideration of the correlation of Jyotiṣa and Karman which deals with the qualityful aspects of Brahman in its timed form displayed by the activity of matter and its qualityless aspect in concept of timeless form which is chiefly bifurcated in terms of vyakta (manifest) and avyakta (unmanifest) pertaining to the capacity of human sense organs about the manifestation and disappearance of matter form and its actions. Such a timed and timeless form of Brahman is initially conveyed in the form of Prajāpati and his parvans displaying his mortal as well as immortal forms, actions on which is the chief subject matter of the Brāhmaṇas. In the later period such a form finds mention in the concept of the cosmic flux which holds and releases activity displayed as the breathing of Brahman.³⁰³ Thereby perception of activity extends to its unmanifest form along with the manifested one thus widening the concept of future. The apprehension of such a unified form is synthesized knowledge, the perception a unified one achieved on account of equable reason, a requisite for unification with the world of Brahman, the realization an inherent one separating Ātman from the empirical world. Such a form in accordance with the culture is a '*natural*' form and is apart from the form subjected to 'being and becoming' since the unified form of Brahman constituting matter and space is the one which displays relativity between them and is subjected to the *Aparā* world whereas the nature form in question is the one concerned with the *Parā* world. The motion to such a world is, *परां गति*, the outlet to one a non-divergent point specifying Brahman independent of time and space and it

is to this form of Brahman to which the Ātman belongs, unity with which is the acquisition of the light and knowledge form the culture talks about.

xii. The Perceiver and the Perceived

The philosophy of the culture isolates itself from the others at the stage where it bifurcate Brahman into a '*time and space form*' and a '*supreme form*' out of which Satya or real knowledge is akin to the supreme form. Also perception is inherent in Brahman inclusive of both its forms though the role of Supreme Brahman is of the 'Perceiver' whereas the Time and Space formed Brahman undergoing the modifications is that which is 'Perceived'. If the cosmic philosophy of the culture annexes such a supreme form, the relativity between matter and space which is a general consideration receives an added angle as to a relativity between the activity oriented perceived world of transformation and the perceiving world of the Brahman Ātman. On this ground originates the controversy amongst the philosophical lineage of the culture regarding the nature of the origination of the qualitative world and the world of Ātman.³⁰⁴ Though knowledge as an inherence of Ātman and perception as a means to obtain knowledge is an equal acceptance. Thereby knowledge and perception are attributes of Ātman, the *perceiver or seer* and the knowledge of the qualitative world, the *perceived or seen* is dependent on the perception of the perceiver. If organs as a unitary whole connect the individual to the world of diversified qualitative world, *synthesized knowledge and disappearance of diversity of forms*, in accordance with the culture, *is the perception of the perceiver* situated within. This is termed as real knowledge. On the other hand, reason is a product of Prakṛti which is deemed to be illusionary on account of its modifications due to qualities and actions and a steady equable reason is the utmost form of action suggested by the culture for the unity between Jīvātman and Brahman. If an attempt to locate such a state in the cosmic form representing homogeneity could be pointing the parvans of Prajāpati or else the ones near to the beginning of manifesting activity in the cosmos such a location only points to the beginning of the region of knowledge and is essentially a part of the 'perceived'. Also it is an '*edge*' upto which actions performed on part of human free will extend thus ending there the concept of Karman

as human actions equally ending there the role of Prakṛti as a perceptive means to perform actions. The derivation of knowledge and the role of the perceiver yet remain to be discovered on the background of the unity at this stage where release about to happen is a created Prārabdha by means of *apūrva* of equable reason or at that of *mahat* indicating the existence of the three *guṇas* as a prognostication of the remains of Prakṛti, the independent element standing in between the unity and on account of which the other two angles, the Jivātman and the Brahman are held apart.

xiii. Perception and the Activity of Release

‘*Synthesized knowledge*’ on part of the Ātman could be termed as a ‘*stimulus*’ for the ‘*change in perception*’ of the Jivātman. As the cause of perception changes from the outer diversified world to the Ātman world, the form of knowledge no more diversified takes a form which acknowledges the Supreme Ātman in a unified form of ‘knowledge’ as well as ‘to be known’.³⁰⁵ While the Supreme Ātman is perceived with such a unified knowledge, Perception becomes a *Kriyā* (activity) on part of the Jivātman and not a Karman³⁰⁶ since *Perception at this stage is a ‘Form’* itself and not a mere quality incurred by the Jivātman. With such a Perception when the Jivātman achieves oneness of form with the perceiving supreme Ātman the perception becomes a unification of the Jivātman and the Supreme Ātman. Such a unified Perception perceiving the remains of Prakṛti could be leading to end the role of Prakṛti in and around the Jivātman where supposedly happens the final activity of liberation of ‘knowledge derived in the form of light’.

If such an explanation could be provided as an act of final interaction between man and cosmos, the event happening at the point of release, Vedāṅga Jyotiṣa as an eye of the Veda, has an extension up to this point in the form of ‘*unified perception*’ and ‘*release of light*’ as also the concept of Karman which at this stage extends beyond willful human actions projecting as the ‘*activity of the release of knowledge in the form of light*’.³⁰⁷

Concluding Remarks

By the study of the cosmic light forms conducted for the understanding of the future of man, Jyotiḥśāstra has an extension to the philosophy of the culture.

On a final note, the correlation of Jyotiḥśāstra and the concept of Karman in the culture came together for 'A gradual working on a knowledge (light) form for human' which he basically inheres as a part of the Supreme Ātman, in accordance with the philosophy of the literature.

End Notes

1. Rectificatory actions are chiefly Śāntis and Prāyaścittas. Śānti is derived from √ śam 'to be appeased'. The word 'śam' in conjoined form occur in many places in RV (I.93.7, III.18.4, IV.12.5, VI.50.7, VIII. 39.4, X.182.1-3) portraying 'happiness' and 'welfare' and repeatedly occurs in ṚV. VII. 35 and AV. IX. 10. The word 'śami' in some passages of ṚV means 'karman' H/o Dh.Vol. V, part II, p.723. Vrata in the sense of Prāyaścitta occur in Yājñavalkya Smṛti III. 251, 252.
2. JV (ṚV) 36.
3. Vṛddhayavanajāta I.3., Bṛhajjātaka I.3, Sārāvali II.4.
4. अन्वजन्मांतरकृतं पुंसां कर्म शुभाशुभम्। यत्तस्य शकुनः पाकं निवेदयति गच्छताम्॥ बृहद्योगयात्रा २३.1., Br. Sam. 98.14.
5. RV. X. 129.
6. AV 19.53, 54.
7. of gods and asuras (III.3.7.1), of people (II.1.2.1) of yajña (I.6.9.1).
8. कालः स्वभावो नियतिर्यदृच्छा भूतानि योनिः पुरुष इति चिन्त्यम्। Śvetā. Up. I.2.
9. Śvetā. Up. VI. 5.
10. Tai. Up. III. 1.
11. The Philosophy of the Upanishads, p. 224.
12. Heaven as luminous world AV. 4.34.2; Hell (Naraka) as lowest darkness AV. 8.2.24.
13. Vedic Mythology, pp. 101-104.
14. History of Dharmaśāstra, Vol. V. 1, p.21.
15. यो वै स धर्मः सत्यं वै तत्। Br. Up. I.4.14.

16. Manusmṛti I.34, 35, Gītā X.6.
17. Br. Up. IV. 4.20,22, imperishable Br. Up. III. 9.28, immortal Chān. Up. VI. 15, VIII. 6, as light (Br. Up. IV. 3.6).
18. With the aid of liṅgaśarīra (subtle body) Gītā XV. 7,8.
19. सति मूले तद्विपाको जात्यायुर्भोगाः। Yogadarśana II. 13.
20. Dṛṣṭajanma and adṛṣṭajanma vedanīya karmans. Yogadarśana II. 12.
21. RV. X. 18.
22. Mahābhārata 13.7.3; Śvetā. Up.V.12; Br. Up. IV.4.5.
23. Divya-kriyā, divya-vidhi, daiva, kāla, mṛtyu, prakṛti and karma. Karma and Rebirth, p. 40.
24. Śat. Brā. XI. 5.6.9.
25. Kauṣ. Up. I.3.
26. Śabara on Mīm. Sū. IV. 3.15.
27. Śat. Brā. X. 4.4.9.
28. Apte, p. 158.
29. पुण्यः पुण्येन कर्मणा भवति, पापः पापेन। Br. Up. IV. 4.5.
30. Mind is connected with all three times. Sāmkhyakārikā 133.
31. Vasantarāja Śakuna. I. 7.
32. वेदाङ्ग ज्योतिष (of RV) verse 35. Also quoted in introduction to commentary on Bṛhajjātaka (Utpala) found in Siddhānta Śīromaṇi of Bhaskarācārya, also Varāha and Utpala, p. 24.
33. “Their life was a yearning after eternity, their activity a struggle to return into that divine essence ----- their external life a certainty. The highest object of their religion was to restore that bond.” Ancient Sanskrit Literature, p. 13.
34. RV. V. 40.5,6,8.
35. Hindu Astronomy, p.35.
36. Hindu Astronomy, p. 35.
37. Bṛhat Saṁhitā. V. 1.
38. History of Dharmaśāstra, V. 1, pp. 241-250.

39. Kalpa and other long time reckonings were a regular topic of the Siddhānta literature, the beginning of which were calculated to understand the cosmic future in that particular Era estimated from the qualities specified by the beginning time point.
40. Upto 9th c.A.D. later to which the study of Śakunas appear in traces.
41. Aṅgavijjā, a Prakrit text on omens classifies every perceptible object in the world as an ominous entity. Jyotiḥśāstra, p.75. Pingree locates the text nearby to Varāhamihira, the statement seeminly displays the most flourished period of development of Śakuna literature.
42. History of Dharmaśāstra, V.1, p.21.
43. RV. I. 164.11.
AV.V.35.4. mention the cosmic order as Saṁvatsara with twelve spokes.
in a consolidated form, RV. X. 121.
44. Samagra Tilak, p. 123.
45. Tai. Saṁ. 1.5.25.
46. RV. VIII. 48.7.
47. यथा प्रकाशयत्येकः कृत्स्नं लोकमिमं रविः।
क्षेत्रं क्षेत्री तता कृत्स्नं प्रकाशयति भारत॥ Gītā XIII.33.
48. Candra as bright, shining, radiant (RV.VI.65.2) mās or māsa as a measurer (RV. VIII.91.2.) Candramas (RV. I.24.10., X. 190.3.).
49. Tai. Saṁ. 3.4.7.1., Moon being bright on account of the Ādityas. Tai.Saṁ.2.4.14.
50. RV.X.90.13; Bṛ. Up. I.3.16, III.2.13.
51. A term employed by Duessen for the doctrine of transmigration and emancipation, the fourth part of the system of the Upaniṣads. The Philosophy of the Upanishads, p.313.
52. Śat, Brā. II.3.2.3., as arcirādi, Gītā VIII.24.
53. dhūmrādi, Gītā VIII. 25.
54. Yājñavalkya Smṛti III.175.
55. Bṛ. Up. VI. 2.15-16, Chān. Up. V.10.5.
56. RV. X. 15.9.
57. RV. X. 15.7.

59. RV. X. 85.2.; in the form of comparison in RV. VIII.82.8., also AV. 7.81.3,4.
60. RV. IX. 106.8.
61. RV. VIII. 48.3.
62. RV. X. 85.5.
63. Vedic Mythology, p.113.
64. Śat. Brā. 1.6.5.
65. Chān. Up. V.10.1.
66. Bṛ. Up. VI.2.16; Kauṣ. Up. 1.2.
67. Chān. Up. V.10.2,4,5.
68. As an implication in RV. X.88.15.
69. Bhāratīya Jyotiṣaśāstra, p. 17.
70. ṚV. II.40.
71. The above ṛcā can be an early evidence of connectivity between morality and action by means of Jyotiṣa.
72. √ Vṛ 'to cover'.
73. Vedic Mythology, p. 25.
74. RV. VII.87.3, VI. 67.5.; AV. IV. 16.4.
75. A Comparative History of Ideas; p.92.
76. स वै संबत्सर एव प्रजापतिस्तस्यैतानि पर्वाण्यहोरात्रयोः सन्धी पौर्णमासी चामावास्या चतुर्मुखानि। Śat. Brā. I.6.3.35.
77. Agni is the personification of sacrificial fire, worship of fire under this name is purely Indian. Vedic Mythology, p.99.
78. Bhāratīya Jyotiṣaśāstra, p.56.
79. Tai. Brā. I.2.5.11.; supposedly the mental disposition of the gods.
80. Bhāratīya Jyotiṣaśāstra, p.6. Also stars as the lights of pious men Tai. Saṁ. 5.4.1.3.
81. Tai. Brā. I.5.2.10.
82. Bhāratīya Jyotiṣaśāstra, p.53,59.; RV. X.82.13.
83. Classification of Nakṣatras for the purpose of actions occurs in Bṛhat Saṁhitā 97.6-11.
84. Bṛhat Saṁhitā 15.1-27.

85. Chap. 104. 1-5.
86. Bhāratīya Jyotiṣaśāstra, p.56.
87. History of Dharmaśāstra, V.1, p.565.
88. Bṛhajjātaka I. 10-11.
89. Vāmana Purāṇa Chap. 5.45-60.
90. Bṛhajjātaka I.3.
91. Sārāvali II. 4.
92. Bṛhajjātaka I. 9.
93. Prārabdha as fructified past actions, Laghujātaka I. 3., Sārāvali 2.27.
94. Bhāratīya Jyotiṣaśāstra, p.478.
95. RV. V. 40.5.
96. Chāndogya Upaniṣad VIII. 13.
97. Tai. Brā. I.2.5.11., Śat. Brā. 14.3.2.12.
98. Yogadarśana p. 235.
99. Gītā Rahasya p. 284.
100. Tai. Up. II. 1.
101. Gītā Rahasya p. 365.
102. Yogadarśana II. 18.
103. Nāsadiyasūkta RV. X. 129.4.
104. RV. X. 129.4.
105. Patanjali's Mahābhāṣya on Vārtika 2 on Pāṇini II. 2.5.
106. Mahābhārata, Ādiparva I. 248-250.
107. Vaiśeṣikasūtra II. 2. 6-9.
108. Physical perception of human senses limited to the present, the bāhyakaraṇas are concerned with the present. Sāṃkhyakārikā 133.
109. Maitri Upaniṣad VI. 14-16.
110. Mānmevodaya p. 179.
111. Mahābhāṣya of Patañjali on Vārtika 2 on Pāṇini II. 2.5.
112. Gītā II. 28.
113. Nyāya-Vaiśeṣikas consider 'time' in the sense of 'motion'.

114. Kāla as a Nimitta (an occasion) for performance of an act. न कालो गुणः। निमित्तं हेतदित्युक्तम्। Śabara on Mīm. Sū. VI. 2.25. Also Mahābhārata 12.34.10. on agency of Kāla.
115. The Encyclopaedia of Religion. p. 78.
116. History of Dharmaśāstra, V. 2, p. 743.
117. Bṛhajjātaka I.3; Bṛhat Saṁhitā XLV. 3.
118. Bhāratiya Jyotiṣaśāstra, p. 16.
119. अग्निर्ज्योतिरहः शुक्लः षण्मासा उत्तरायणम्।
तत्र प्रयाता गच्छन्ति ब्रह्म ब्रह्मविदो जनाः॥ Gītā VIII. 24., Also Gītā VIII. 25.
120. Oxford Thesaurus. p.513.
121. Apte. p. 180.
122. Śri Chintan p. 100.
123. Gītā Rahasya, p. 1013.
124. प्रकाशक्रियास्थितिशीलं भूतेंद्रियात्मकं भोगापवर्गार्थं दृश्यम्। Yogadarśana. II.18. Also pp. 194-196.
125. Atharvaveda XIX. 53.1.
126. व्यापारव्यतिरेकेण कालमेके प्रचक्षते। Also निमित्तं कालमेवाहुर्विभक्तेनात्मना स्थितम्॥ Vākyapadīya, Prakīrṇakakāṇḍa, kālasamuddeśa verses 1,3.
127. Maitri Upaniṣad VI. 14.
128. Gītā Rahasya, p. 362.
129. Śvetā. Up. VI.4.
130. Oxford Thesaurus. p.513.
131. Atharvaveda XIX. 53.10.
132. Mīm. Sū. VI. 2. 23-26.
133. Manusmṛti VI. 50.
134. Vedāṅga Jyotiṣa (Yajurveda) verse 3.
135. संसरण as birth and rebirth, Apte. p. 573.
136. Carakasāṁhitā IV. 2.31, 35,36.
137. Manusmṛti XII. 39,40.

138. यत्कालं हि यत्सुखं दुःखं वा आत्मना भुञ्जयति तस्मैव लोके फलत्वं प्रसिद्धम्। Śāṅkarabhāṣya on Brahmasūtra III. 2.38.
139. Appendix III in Doctrine of Karma, p. 592.
140. Mahābhārata 12.206.13.
141. दैव in the sense of √ दिव 10pp 'to suffer'.
142. कर्मणा कालयुक्तेन तथेदम् चेष्टते जगत्। Mahābhārata 12.34.10.
143. Yogadarśana II.13., Padma Purāṇa II. 94.11., also according to the Buddhists, present circumstances are determined by one's past actions. Encyclopaedia of Religion and Ethics, Vol. VII, p. 675.
144. Gītā Rahasya p. 366.
145. Kathāvattuppakaraṇa Aṭṭhakathā XV. 11(152).
146. Karman as matter form, 'puḍgala', 'Karma in Jainism' in the Doctrine of Karma, p. 39.
147. Commentary of Buddhaghōṣa on Kathāvathu, XV. 11 (152).
148. Classified by Vasubandhu. 'The nature of Sañcita karma and Anātmavāda' in the Doctrine of karma, p. 591.
149. Chāndogya Upaniṣad III. 14.1.
150. Caraka Saṁhitā IV. 2.36.
151. Gītā III. 33.
152. Commentary of Śāṅkarācārya on Bṛ. Up. II.1.19.
153. Yāj. Smṛ. III.140.
154. Chān. Up. 4.15, 5.10; Bṛ. Up. VI. 2.2., Kauṣ. Up. 1.2.3.
155. Chān. Up. 5.10.8., Kaṭha Up. 2.6.7., Gītā XVI. 19-21.
156. कर्मण्येवाधिकारस्ते मा फलेषु कदाचन। Gītā II. 47.
157. Fruit is from the act of sacrifice with apūrva as the principle factor. Pūrva Mīmāṁsā in its sources, pp. 296-317.
158. Gītā III.33.
159. Svabhāva in the sense of fruit giving authority expressed as न कर्तृत्वं न कर्माणि लोकस्य सृजति प्रभुः। न कर्मफलसंयोगं स्वभावस्तु प्रवर्तते।। Gītā V. 14.
160. Gītā XVIII.59,60.; Also कार्यते ह्यवशः कर्म सर्वः प्रकृतिजैर्गुणैः। Gītā III.5.

161. Fruition as a combination of various factors, Śrī Chintan, p. 100.
162. An Autobiography of a Yogi, p. 232, 233, Religion and Philosophy of the Veda and Upaniṣads p. 221, Yogadarśana p. 327.
163. Yogadarśana p. 394.
164. Gītā Rahasya, p. 1056.
165. Gītā Rahasya, p. 1063.
166. Gītā Rahasya, p. 284.
167. Sāṁkhyakārikā, verse 9., Chān. Up. VI. 2.2.
168. Sāṁkhyakārikā verses 43-55, commentary of Śaṅkarācārya on Bṛ. Up. IV. 4.2.
169. As an operation of cosmic Karmāśaya in the form of Śakunas both spontaneous as well as induced studied in the literature.
170. AV. XVIII. 2.57.; Also Kāṭhaka Samhitā 40.103 and Vāj. Sam. 18.60 refer to the region of supreme heaven reached by the performance of iṣṭāpūrta.
171. Bṛ. Up. IV. 4. 5-7.
172. शुभाशुभम् फलम् कर्म। Manusmṛti 12.3. Also कर्मजा गतयो नृणाम्। Manusmṛti 12.3. in a pleural sense.
173. Manusmṛti 12.124.
174. RV. I. 164.30, 31, 38.
175. Gītā IV. 16-18; RV. I. 148.2.; RV. VIII.36.7.
176. यज्ञो वै श्रेष्ठतमं कर्म। Śat. Brā. 1.7.3.5.
177. RV. IX. 113.7-10, X. 16.4.
178. Prajāpati, both mortal as well as immortal by Agnicayana became immortal. Śat. Brā. X. 1.4.1.
179. Śat. Brā. II. 3.3.8-12.
180. Śat. Brā. X. 4.4.9, 10.
181. Śat. Brā. II. 3.1.5.
182. Bhāratīya Jyotiṣaśāstra, p. 36.
183. Jyotiṣtomayajña, Gītā Rahasya, p. 402.
184. Gītā Rahasya p. 400, 405-406.

185. Agni and Sūrya as vratapāḥ, RV. V. 2.8, X. 32.6; RV. I. 83.5., Tai. Saṁ. 1.3.4.3. quotes Agni as Vratapati.
186. Kāṭhaka Saṁhitā XI. 3.
187. Tai. Brā. 1.1.2.6-7, Śat. Brā. II. 1.2.
188. Śābarabhāṣya on Mīm. Sū. II. 1.1.
189. as ‘transcendental’ result or ‘invisible effect’ Mīm. Sū. IX. 1.14 and X. 3.4.
190. स्वर्गकामो यजेत| Śābarabhāṣya 1.1.2, 2.1.1
191. हेयं दुःखमनागतम्| Yogadarśana II. 16.
192. Work on body parts of Prajāpati as a cosmic form of desire. Also kāmyakarmas as dharma.
193. Bṛ. Up. IV. 4.5., History of Dharmasāstra, V.2. p. 1574.
194. Śat. Brā. II. 3.2.3 employs the word देवेषु indicating the region.
195. Bṛ. Up. VI.2., Chān. Up. V. 3.2.
196. Bhāratīya Jyotiṣasāstra p. 145.
197. Yajñavalkya Smṛti I. 79. Viṣṇudharmottara Purāṇa I. 105.9, 10.
198. Gargasāṁhitā Aṅga II (karmaguṇa) in Jyotiḥśāstra p. 69.
199. Gītā XIV. 18.
200. Bhāratīya Jyotiṣasāstra p. 56.
201. देवता from √ दिव I. 4p. ‘to shine’
202. Agnihotra as the boat to heaven, Śat. Brā. II. 3.3.15.
203. To Soma, RV. IX. 138.8.
204. Atharvaveda. 53.4.
205. Religion and Philosophy of the Veda and Upaniṣads p. 275.
206. Gītā Rahasya p. 409.
207. Apte. p. 580.
208. Gītā XIV. 22., सत्त्वं लघु प्रकाशकमिष्टम्| Sāṁkhyakārikā. 13
209. Yogadarśana II. 18.
210. Gītā Rahasya p. 212,213, An Autobiography of a Yogi, p. 233.
211. In the order of Ṛta, the deities and the luminaries.
212. Caraka Saṁhitā IV. 2.36.

213. Gītā Rahasya p. 265.
214. RV. X. 72.2.
215. Asat or अव्यक्त RV. X. 129.4., Chān. Up. III. 19.1., Tai. Up. 2.7. explain imperceptible Brahman as the support out of which the named and formed visible world emerged, Śāṅkarācārya on Vedāntasūtra I. 4.15 mention that non-existence is not absolute non-existence.
216. Equates महत् of सांख्य, Chān Up. 3.1-3. 'Sat'. without a second later differentiated on account of Time.
217. सर्वद्वारेषु देहेऽस्मिन् प्रकाश उपजायते। ज्ञानं यदा तदा विद्याद्विवृद्धं सत्त्वमित्युत॥ Gītā XIV. 11.
218. Śat. Brā. XI.2.8.1,2.
219. Vāj. Saṁh. 33.74.; RV. X.129.
220. Maitrāyaṇi Upaniṣad 6.15.
221. Muṇḍ. Up. 2.2.10.
222. दृश्यते तु। Brahmasūtra 2.1.6.
223. Pāñcāgnividya Bṛ Up. VI.2.15.
224. Gītā X IV. 14.
225. Gītā X IV. 18.
226. Gītā X IV. 17.
227. Śabara on Mīm. Sū. III. 1.3.
228. Apte p. 504.
229. Doctrine of Karma, p.590.
230. Yogadarśana III. 18.
231. Commentary of Kolhatkar on Yogadarśana IV.2.
232. Citta, on account of being part of अंतःकरण, which is an evolute of sattva part of Pañcatanmātras amongst the twenty five principles classified by Sāṅkhyas.
233. Commentary of Kolhatkar on Yogadarśana I. 35.
234. Yogadarśana II.23.
235. Yogadarśana II. 54, II. 36., II.39.
236. Bṛ. Up. I.6.2.
237. Dictionary of Advaita Vedānta p.32.

238. Yogadarśana II. 14.
239. 'Pūrva Mimāṃsā, Apūrva of Ritual Acts' p.284. and 'Karma and Hindu Mythology' p.336 in the Doctrine of Karma.
240. Gītā XIV. 18.
241. काम एष क्रोध एष रजोगुणसमुद्भवः। Gītā III. 37.
242. Yogasūtra IV. 18-21.
243. Yogavāsiṣṭha Rāmāyaṇa III. 96.11.
244. Buddhaghōṣa's commentary on Kathāvatthu XV. 11(152).
245. Vedic Mythology p. 14.
246. Tai.Up. III. 1.
247. Gītā VIII.3.
248. RV. X. 129.4.
249. Caraka-Samhitā IV. 2.36.
250. Gītā Rahasya p 295-296
251. Vāj. Samh. 34.1-6.
252. H/o. Dh. Vol. V.1. p. 690.
253. For instance, A day of Brahmā equals fourteen Manvantaras constituting a Kalpa. Viṣṇupurāṇa VI. 3.11-12. Also Manusmṛti I.73.
254. Gītā VIII. 18,19.
255. Bṛ. Up. III. 9.26, IV. 5.15, Chān Up. VII. 24.1, Śvetā. Up. VI. 19; Kaṭha Up. IV. 10-11.
256. Gītā Rahasya p. 382.
257. Bṛ. Up. X. 4.10.
258. Bṛ. Up. IV. 3.21.
259. Chān. Up. 6.8-16.
260. Vedāntasūtra 4.3.14.
261. Gītā XIII. 16.
262. सर्वभूतेषु येनेकं भावमत्ययमीक्षते। अविभक्तं विभक्तेषु तज्ज्ञानं विद्धि सात्त्विकम्॥ Gītā XVIII.20. Also XIII.27.
263. Knowledge as pure discerning reason, Gītā Rahasya p. 312.

264. द्रष्टा दृशिमात्रः शुद्धोऽपि प्रत्ययानुपपश्यः। Yogadarśana II.20.
265. Yogadarśana III. 13.
266. Prakṛti or Pradhāna, मूलप्रकृतिरविकृतिर्महदाद्याः प्रकृतिविकृतयः सप्त। Sāṃkhyakārikā 3.
267. Vaiśeṣikasūtra II. 2.8.9., Chānd. Up. IV. 10.4.
268. Tai. Brā.I.5.2.1.
269. Also the equinoxes. Hindu Astronomy p. 27.
270. Kauṣītaki Brāhmaṇa 19.3.
271. Śat. Brā. II. 1.2. 2-4.
272. Bhāratīya Jyotiṣaśāstra p.48.
273. Tāṇḍya Brāhmaṇa IV. 6. 3-1, IV. 7.1.
274. Bhāratīya Jyotiṣaśāstra p. 47,48.
275. एतेन भूतैर्द्रियेषु धर्मलक्षणावस्था परिणामा व्याख्याताः।Yogadarśana III. 13.
276. Commentary of Kolhatkar on Yogadarśana IV. 2. p.563.
277. Such a reference finds mention in the 16th digit of Prajāpati which is the constant one.
Bṛ. Up. I. 5. 14, 15 and Śāṅkarācārya's commentary on it.
278. Apte p. 473.
279. Commentary of Śāṅkarācārya on Bṛ. Up. I. 2.4.
280. अभिधेयाविनाभूते प्रतीतिर्लक्षणेष्यते । ref. of Tantravārttika in History of Dharmaśāstra V. 2.
on p. 1293.
281. Maitri Upaniṣad VI. 15.
282. Nirguṇa Brahman Chān. Up. VII. 24.1., Śvetā. Up. VI. 19., Viṣṇupurāṇa Chap. III.
283. Gītā II. 53.
284. Śāṅkarācāryas commentary on Bṛ. Up. IV. 3.7.
285. Bṛ. Up. IV. 3.19.
286. Bṛ. Up. IV. 3.9.
287. Commentary of Śāṅkarācārya on Bṛ. Up. IV. 3.9.
288. RV. I. 24.8, VII. 87.1, History of Dharmaśāstra, V.2. p.948, pp. 1555-1558.
289. Bṛ. Up. IV. 4.3.
290. Chān. Up. III. 14.1.
291. Yogadarśana II. 24.

292. Gītā Rahasya p. 362.
293. Kaṭha Up. I. ii.5., Śvetā. Up. I.7.
294. Vaiśeṣikasūtra V. 2.18.
295. Tai. Brā. III. 10.11.2 , III. 11.8.5.
296. Chān. Up. 2.23.1., Kena Up. 33.
297. Gītā XV. 3,5., Yogadarśana I. 16.
298. Yogadarśana II. 20., Gītā II. 54-68.
299. Gītā II. 51,53.
300. Vedāntasūtra IV. 3.15.
301. Śvetā. Up. VI. 5.
302. Gītā Rahasya p. 339-340.
303. “The cosmic body of Virāt, the cosmic reservoir from which all particular forms of actions are drawn out, he is the equalizing factor, source of all activity, the cosmic prāṇa,” Bṛhadāraṇyaka Upaniṣad, summary of Śivānanda, p. 139., Also Bhava and Bhāva, Chān. Up. VIII.8.1.
304. Jīva and Cosmos as real and illusionary respectively, The Philosophical Schools represent them as independent elements though Vedānta and Gītā extends to express Prakṛti (cosmos) as illusionary.
305. ज्ञानं ज्ञेयं ज्ञानगम्यं। Gītā XIII. 17.
306. Difference between ‘kriyā’ and ‘karman’, ‘kriyā’ is activity whereas ‘karman’ is action inclusive of will, desire, act. Every ‘karman’ is a kriyā but every kriyā is not a karman. Karmācā Siddhānta p. 100.
307. Knowledge as light. Gītā XIV. 11.

Chapter V

Conclusions

Astrology has played an important role in the history of man directing his mental impulses on the conceptualization of future. It is prevalent even today and is looked upon as an intimate subject in the life of man.

As of most of the ancient cultures Indian Astrology (Jyotiḥśāstra) dealt with the study of the cosmic light forms and their activity for the understanding of human future. What bifurcate it from the other cultures was its profuse interaction with the doctrine of Karman in the culture. It is on this account that it signified the adjective *Kārmic* associating itself with the physical as well as the moral actions of man and their outcome allowing an extension to the theory of transmigration and rebirth of human.

In the Vedic times it carried a practical significance so as to provide specific times for the ritual activities designed by the culture for the fulfillment of the ideology related to the future. Along with its utility in the religion of the Veda it played a significant role in the representation of the Ethics and Eschatology of the early man advancing for an interdisciplinary connection with the Philosophy of the culture. In the later times it appeared in connection with actions of various sorts inclusive of the Śānti rites and Muhūrtas for the Saṁskāras retaining its importance in the day to day life of man.

In the recent ages the *daiva* counterpart of the correlation of Jyotiṣa and Karma came forth which is connected to the reading of the past actions of man and thereby his probable future in the current life. Apart from an underestimation of the subject proper the practice has spread an attitude of pessimism in the society affecting human life and its values. The subject thereby awaited a research. It also demanded an extraction of the nature of the correlation in its original and complete form.

A glance in the literature revealed that the topic existed in a conglomerate spread and was in need of a proper compilation. An autopsy also divulged that no individual work bringing forth the variance of the correlation of the earlier times

presently exist. Sparingly conducted researches in the modern times and scarcity of modern texts on the above matter also pointed to the requirement of a research. Apart from the above factors the investigation on the subject chiefly demanded a focus on the **intentional application of specific time for actions** by means of the correlation of Jyotiṣa and the concept of Karman by the Vedic man as a practically working device for the vision and the making of the future of man from the man cosmic interaction.

With such purposes a scrutiny of the elemental form of the correlation in the original texts was undertaken.

The study identified the following research problem. Though the culture claimed the making of future of man by the utility of time for actions from the man cosmic interaction by means of the correlation the eventual mechanism involved in the making is nowhere deciphered in the literature. The interaction evidently presupposed an activity leading to the motion (*gati*) of man directing him towards future. On an exploratory survey on the nature of the activity in the above matter the hypothesis formulated as under

The activity underlying the event can be coined as the *derivation of knowledge* (light) by means of perception from the interaction.

As of the role of Jyotiṣa and Karma in the phenomenon it practically worked for the change or transformation of man.

As a concluding part of the studies, the following factors demand a final discussion on account of their role in bringing forth the Correlation as also they carry a **Prognostic Value** for the future of the studies.

Knowledge of two Principles

The Correlation deals with the two chief principles, the Cosmos and Human. The knowledge about the two principles is derived from their actions and interactions. The study of Cosmos and Human from this perspective in order to obtain a vision about future is the chief object of the origin and growth of the Correlation of Jyotiṣa and the Concept of Karman in the literature. Whereas Jyotiṣa carries an Indo-

European legacy, Karma is purely indigenous in its origin and appears as a presupposition in the culture. Jyotiṣa is concerned with the exploration of the cosmic light forms and their order and is designated as a Vedāṅga showing a purposeful development to sub serve the goal of the Veda. It is connected with perceptive knowledge about future and past of human and has a practical utility in the culture as to providing proper times for performance of ritual actions conducted for a definite future. Karma on the other hand has a human orientation rather than a cosmic one, is analyzed qualitatively, its qualitative bifurcation a deliberate attempt on part of the culture gradually developed in order to locate the future of man essentially believed to be dependent on the actions of man; the cosmic actions subordinated for such a purpose. The Correlation also makes an effort to establish a relationship between man and cosmos with an extension to establish the relation of the empirical world to the absolute which is declared as of light and knowledge form.

The cosmos is principally a topic of excavation in the Saṁhitās. The light forms in the cosmos appearing as anthropomorphized deities are explored to get an idea regarding human life and its future. That they delegated the thoughts and actions of human and were observed and followed to understand and plan about human future inclusive of life after death indicate the closeness and the reliance of the Vedic man on Cosmos as also is explanatory of the basis of the Correlation of Jyotiṣa and Karman existing in this period. Earlier the spontaneous cosmic actions in the form of divinations were provisions for the knowledge regarding future of man existing along with countermeasures in the Saṁhitās. The concept of lucky and unlucky time periods simultaneously existed. Ritual actions performed on auspicious times derived from the motion of the luminaries supposedly led to a desired future inclusive of long life, prosperity and immortality after the death of the physical body.

The quest for real knowledge termed as *Satya* already exist in the early period expressing the cosmic order, Ṛta as a representation of the *Satya* in a visible form. The Earth supported by *Satya* which also regulated the work in the skies (RV. X.85.1.) appears to be an established thought of this period and which evidently connected *Satya* as pervading both the regions. Righteousness, a counterpart of the all

pervading Truth, was believed to lead to the region of external light. The deities of the form of light and residing in the region of light were believed to be originally men and they received their immortality through the righteous deeds.

Ṛta therefore represented the cosmic order as light and the religious order performed by men came in the form of a rite. Such a way of thought established the relationship of the cosmic world and the world of men through perception and actions regarding future thereby righteous deeds were deemed proper deeds which made attainable Svarga as expressed in the Ṛgveda (I. 125. 4-6) and Atharvaveda (IV. 34.2,5) indicating a prevalence.

An effort is made to attain knowledge of the working of cosmos and human occur in this period. Equally establishing a relationship between cosmos and human by means of knowledge expressed as *Satya* is evident in this phase, their connectivity achieved by the visible cosmic order of the light forms a part of the cosmos and righteous actions on part of human as representations of the knowledge in the form of *Satya*.

Knowledge of *Satya* as the binding force of the two principles continues in the Brāhmaṇas. An effort to connect the two principles by means of ritual actions performed by men on proper time designed from the cosmic motion represented by Prajāpati occurs in this period. Knowledge came to be identified as exactness in the sacrifices limiting itself to ritual actions up to this period. Later the inert nature of Knowledge came to be scrutinized in the period of the Upaniṣads. Prajāpati of the Brāhmaṇas came to be identified as the external body of Brahman which is the all pervading form of knowledge and light. While as an internal projection of Brahman, Prajāpati was the vital force, sustainer and immortal, externally it denoted truth in the form of Sun etc. as also came to be recognized as an effect, non-luminous and mortal being subjected to birth and death projecting the timed form of Brahman starting from the Sun. If this was an explanation of the cosmic form of Brahman, its existence in human as individualized Brahman or Ātman separated from its principle form on account of individualized desire also came to be explained and identified with real knowledge or *Satya* as an attribute of the Ātman. Dream state at this stage became

connected as a state of the Ātman as also a kind of perception of the knowledge of future and later the past actions of man. Along with the varied meanings of Karma in the Upaniṣads as cosmic activity, as Ṛta and sacrifices as also the moral aspect inclusive of daiva, Karma chiefly came to be identified with *Vidyā* (knowledge) (Br. Up. I.5.16.). At this point of time the cosmos and its actions which were the chief source of knowledge of the future of man rendered secondary due to the discovery of the knowledge form of human residing in him. With this development the notion of future became equally inert, the centralization on Brahman residing in man as well as outside him and representing truth, light and immortality. As actions of man became the efficient cause for the origination of a new body and life, human orientation for the results of actions increased. Present life thereby became an outcome of past actions as also actions of present became decisive about the future lives. Ritual actions leading to *apūrvā* as a connecting medium of the present and the future served as an explanation on part of Karma. Whereas time divisions became a collective unit working on behalf of actions reflecting their fruition manifesting qualitatively, Śakunas thereby became a source of definite knowledge about future upto this period existing as a practical device for the vision of auspicious or inauspicious consequence of acts. If cosmic time divisions and their manifestations provided visions of past actions of man and thereby their future consequences represented as *daiva* or *Karmavipāka* formulating a part of Jyotiṣa of this period, proper times for ritual actions in the form of Muhūrtas were also provided as a representation of self effort on part of human for betterment of future. The connections of actions with the motion (*gati*) of the individualized soul, the *Jīvātman* became a matter of consideration later to the Upaniṣads and a two way effort by means of the Correlation as to providing the vision of the journey of the soul as per its acts by means of the cosmic screen as also supplying appropriate time moments from the cosmic motion for the performance of ritual actions established and in later to this period.

The cosmic principle is throughout a source of information about human and his life, though the nature of activity at the man cosmos interaction deciding the further course of man is decisive about the future. Also in terms of the time divisions

the present of the interaction has an access to a two way activity either deriving Knowledge from cosmic actions about future or actual work on the future by human actions on proper cosmic time points. Thereby the activity of gaining Knowledge is either of the nature of mere understanding or insight about the future and past life or of actual acquisition of a Knowledge Form which is a principal concern for the unity with the Ultimate Form. The capacity of the cosmos and its activity for this two way projection is a concern with the culture efforts for which appears to establish Jyotiṣa as a Vedāṅga in the culture.

Cosmic Actions :The Source of Knowledge

Jyotiṣa as a device to the Knowledge about human future gathered from the perceptive activity of the cosmos is prevalent in the culture since the beginning period. The light forms in the nature anthropomorphized as the activities of the deities are observed regularly in the culture. The physical presence of the Sun and the Moon in the sky also being projected as the deities Sūrya and Soma were the chief light forms in terms of Jyotiṣa in the initial period which conveyed the time to perform activities in the culture as also they were the primary sources for the perceptive formulation of the ideology regarding the human life and its existence after bodily life. Sūrya is recorded as the Ātman in the Ṛgveda, its appearance and disappearance in the sky is connected with the concept of Ātman and its transmigration. The other gods representing the ordered activity in the cosmos were also the representations of the ideology regarding immortality of existence which the gods were beholders of on account of their performance of sacrificial actions. The path of light on which they visited the sacrifices of men was visualized by means of the order of the light bodies. The concept of Prajāpati is more humanized connecting desire to its timed representation reflected by the light forms and their order in the cosmos. He also reflects the metaphysical form of Varuṇa. While the perceptive activity in the named and formed world came to be considered as the activity of Brahman, the visible cosmic light forms gave the symbolic knowledge of the ultimate principle as also they are made a part of the body of Brahman.

Apart from the Perceptive Knowledge of Brahman, as an eye of the Veda, the activities of the cosmic light forms convey Knowledge about the *Jīvātman* and his past actions. The dream state also gives Knowledge about future providing vision of the intellect releasing the past actions. They also serve as visible means of the cosmic stations of the *Jīvātman* beyond body. More of, the cosmic activity is a source of Knowledge in the form of cosmic time. The ordered activity of the cosmic light forms constituting the concept of cosmic time is already prevalent in the culture in the form of Ṛta as a representation of the ordered activity of the gods. Creation proceeding from Kāla is an early observance (AV. XIX. 53,54). Kāla is declared as the creator of the deities which are no other than the ordered light forms and is also the creator of men which are believed to be the originations of nature. Cosmos is thereby made the means to study about human and his future and the ordered activity of the deities is followed for the understanding of future. Sun is observed in both the hemispheres and is related as to being in the gods or the fathers and such notions are coalesced for setting up the ritual activity in the culture evidently connected with human welfare. The sacrificial order setup on the order of cosmic times is already an establishment in the period of the Brāhmaṇas. Moreover, the concept of proper time is also a concept of connectivity of proper cosmic moment brought forth from the cosmic order and proper human activity in the form of ritual works. This connectivity demanded the Knowledge of cosmic activity as a whole and the Knowledge of cosmic time as to which specific moments were appropriate for human happiness, prosperity and good fortune. Equally it demanded the correctness and superiority while performing the sacrificial actions, the Knowledge of which was essential to fulfill the aim of the sacrifices and other ritual works. If this could be deemed a reason for the erection of Jyotiṣa as a Vedāṅga and the emergence of Karma as a doctrine in the culture it could also serve as a pointer to the role of cosmic time for the derivation of Knowledge in human structure and its future. The culture seems to be aware of such a role of time from the very beginning and is evident in the form of actions on the phases of Moon and the utility of the Nakṣatra system. Time working as a connecting unit of actions with its results is an accepted dogma in the sacrificial theory which relates ritual

works with cosmic time for betterment of human future equally sacrifices were deemed to change the course of nature on their performance. If cosmic time was utilized for the performance of ritual actions in the Brāhmaṇas in the later period it is commonly projected as an efficient cause for the happening of any event. Kāla is connected with creation and sustenance of beings and is also equated with end or finish. Time without parts is a projection beyond the Sun where as time with divisions is connected with the rising of the Sun and the qualitative world. The agency of time as that from which the beings appear, grow and disappear is an established fact up to the Upaniṣads (Maitri Upaniṣad VI. 14,15) and the study of Kāla as a *Nimitta* for the performance of actions is a regular practice in the later period consummating in the concept of Muhūrtas and Saṃskāras. The importance of ordered activity in the culture appear to be maintained by the concept of cosmic time, spontaneity in the cosmic activity remains an aspect of divination, its abrupt nature being treated as opposite or reverse of the natural order.

Qualitative Nature of Time

The Correlation basically concerns itself with the qualitative aspects of the cosmos. The cosmic design appears to be studied bifurcated on account of its qualities by the culture to understand the mechanism of Kārmic retribution in human. Fruition of the human actions of the past carries an aspect of dependence functioning on part of the cosmos. Fruition or *vipāka* is essentially believed as by the gods. Inanimate factors such as *adr̥ṣṭa*, the complex of dharma and adharma are believed to operate in bringing out the results of the actions. If such a teleological explanation expressed the causal interpretation for Kārmic retribution on part of the nature then by the study of cosmic time the culture made an effort to provide the period of manifestation of the stored stock of actions. Here Karmavipāka, is a **pathos** and such a consideration as to its perception through Jyotiṣa appears in the later part of the literature. Though the observations of the beginning of any cosmic activity and its further progress is a consideration with the culture from pre-Vedic times in the form of actions of the deities, their qualitative analysis as to their appearances and their manifestation from

the various cosmic quarters is an early formulation for the idea of qualitative time for performing actions. The cosmic order which they together constituted and seemingly which conceptualized the idea of time for regularizing human activity in its physical terms, the series of cosmic forms provided a natural basis for the moral ideology effectuating in the sacrificial actions of man which were arranged on physical time and were also inclusive of wish fulfillments. The anthropomorphized natural forms were perceptive expressions of human behaviour the aerial forms especially Indra showed more affinity with human qualities though the wish for acquiring an immortal light form is prominently evident in the culture which was essentially the domain of anthropomorphized celestial forms along with their ordered appearances compared to the aerial ones. Such ideology appears to be correlated with the physical basis of time displayed by the motion of the Sun and the Moon and emerge practically in the utility of the Full Moon and the New Moon regarding ritual actions. Qualities of nature also appear to be studied by the aid of Nakṣatras which are integrated with the religious system and in the later period they display the characteristics of a person born with Moon in a specific Nakṣatra. The Brāhmaṇas make confident statements about shaping of future of man by work on specific time for instance obtaining of heaven by performance of Agnihotra at a specific time. Time as a force bringing forth the qualities of cosmos to perception and work on qualitatively differing cosmic time can lead human to a cherished future prevailed as a belief and a practice in the culture.

Cosmic and Psychic interaction through Qualitative Time

While the cosmic light forms serve as a perceptive means for human life and its future actual interaction of cosmos and human is evident in the form of actions on specific times for achievement of heaven and immortality. Human actions performed on specific cosmic time gives the necessary motion to such planes as heaven is a firm belief evident behind such interaction. The force of time surface the qualities of the cosmos also its motion differs in the cosmos according to the qualities must have been noticed by the culture in a much earlier phase so as to combine qualitative time with the cultural activities. The various matter forms in the cosmos depicting different

qualities carry a varying period of manifestation on account of their qualitative activity and their varying motion in the cosmos constitute the concept of cosmic time which differ in accordance with the qualitative activity of the matter form is the fundamental idea behind the concept of qualitative time. Apart from its physical nature the cosmos is viewed in accordance with its psychical disposition representing an analytical approach by the cognitive human mind to understand the laws of the cosmos. The light forms in the cosmos carry a certain order and that such a discipline in the nature can be studied and recorded by means of qualitative time is also an observance. The culture makes an early effort to establish the order of the cosmic light forms as the order of *Satya* and *Dharma*.

Human is believed as a product of nature according to Vedic Cosmogony. Certain action performed on specific cosmic time lead to a desired future is a belief behind the sacrificial practices. The cosmic qualitative moment carry a certain potency bringing along transformation in human leading him to a specific plane is a thought behind the actions. Actions on specific time create certain impressions on human substratum giving a certain motion to human existence, the cosmic time serves as a causal link between actions and their results is also a line of thought. Thereby time appears as an efficient cause and actions as *apurva* are the survival links between ritual activities and their results.

In an effort to understand the mechanism of human action and its outcome by means of qualitative cosmic time the cosmic moment serves as a window to look into the past actions of man, his present birth the fruition of his past actions. Karma as declared by the culture is a remnant of desire as also material, the matter form creating its own event horizon decisive of its manifestation and further fruition. In the later phase the study of the vision of the fruition of actions (*Karmavipāka*) and the motion (*gati*) to the soul on its account appears to be an intentional business in the culture on account of which the relativity between *Jyotiṣa* and the doctrine of Karma is evident in the literature.

Human as a part of Brahman is believed to be of light and knowledge form, basically motionless, his motion is accorded to ignorance. The derivation of a

Knowledge Form from the world of activity is also a concern with the culture. Knowledge is equaled with light and order and the sites in human and cosmic structure locating knowledge find mention. Work on proper cosmic time creates the potency to obtain a Knowledge Form or a then understood Light Form in future is a practice in the culture from the beginning phase for which the plane of Sattva specified by light is pointed. The Sattva nature of the deities and their path located by the light forms reaching the plane of heaven is also an observance thereby work on time specifying the Sattva quality in the cosmic pattern appears to be chosen as a point of transformation which could gradually unite human with the desired light form. The qualitative bifurcation in the cosmic design also appears in the Nakṣatra system which is utilized to perform actions in appropriation with their characteristics and later to understand the characteristics of individual born on specific Nakṣatra and his future. Knowledge was symbolized from the ordered actions in the cosmos and also by the equable states in cosmos representing the unity in the diversified objects (*Avibhaktam Vibhakteṣu* as explained in Gitā 18.20).

The interaction reflects two conclusive approaches

Firstly the motion of Sattva is pursued for the planes higher to human existence and

Secondly the Ultimate Knowledge Form expressed as **Release** is beyond the qualitative and is a reflection in the equable or neutral aspects of nature as also knowledge or perception is beyond the concept of Karman which can be morally defined and can further be expressed as a *Kriyā* in the sense of activity explained as the final act of liberation.

Ethical Orientation

Jyotiṣa served a physical basis to the ideology of Vedic man. The perception of human activity and its future can be termed as the chief objectives of the Correlation. The idea of future in its absolute sense carries an Ethical Orientation in the culture. The world of righteousness shows a connection with light (RV. X. 17.4.). Heaven is the place where the righteous dwell (RV. X.16.4.) also a firm belief existed

that the Earth was supported by truth (RV. X. 85.1). Auspicious omens showed an affinity with pleasantness and light. The anthropomorphized deities in their ordered activity are perceptions of their moral structure which display a certain code of conduct which is to be followed by human. The removal of sin is also an intention behind sacrifices. (Śat. Brā. II.5.2.25.). Earlier the cosmic order Ṛta also exists as a moral law (RV. VII. 89.5,11.). The Tripartite pantheon Sūrya, Soma, and Agni depict the connection of order and morality with their physical basis. The path of Sūrya is morality generated evidently prepared for him by Varuṇa (RV. I. 24.8, VII. 87.1). Varuṇa is the controller of the law and the order prevailing in the cosmos, he is the moral ruler and is connected with punishment for errors in sacrifices and also with false utterances. (Tai. Brā. I. 6.5.4, I. 7.2.6.). Prajāpati appears as a cosmic form of desire and is connected with ritual actions in the Brāhmaṇas. Though in the later phase desire and its outcome is the prime topic of scrutiny and is declared as the seed connected with transmigration of human. As *Puṇya* and *Pāpa* linked man to his next birth the nature of ritual actions changed to ethically retributive actions focusing on the moral nature of the Jīvātman and the cosmic aspect connected with morality rendered secondary. In spite of which the order and light in the cosmos became metaphoric projections of Brahman the activity perceptible in the cosmos displaying the symbolic connection by means of the correlation serving a perceptible natural basis to knowledge.

Destiny and Self-Effort

The ethical aspect of Karma with the concept of transmigration in the Upaniṣads seemingly created an offshoot to the doctrine of Karma which shifted its meaning from active actions to passive responsibility. Every creation or else every expression carried its own destiny which intervened in the future of that particular creation. The word destiny coming from the Latin verb stare ‘to stand’ in its Indian counterpart as *daiva* carried the sense of divine will to be faced or to be suffered. It is not totally equivalent with Karma as it is the fruition of the Karma performed in the

past and occurs as a mechanical law operating in and by the cosmos. In this sense it defines fatalism expressing that which cannot be changed or is beyond human control.

In the later period the culture makes an effort to understand *daiva* or past actions by means of Jyotiṣa. The remains of work appear as divinations in the Upaniṣads which relate objects in the dreams as impressions of the past experiences. Cosmic moment is considered a witness to the past and the inevitable future of a certain manifesting activity though stars rather incline than compel is a belief and to this extent Varāha mentions about horoscopes indicating only the tendencies regarding the present birth considered as an outcome of past lives therefore active Karma retains its importance.

Karma as self-effort or *Puruṣakāra* is also a part of the Correlation which connects proper time with cultural activities performed for wish fulfillments related to future. Karma is remedial in this sense performed for a betterment in future life and preferably a concern with the next life perhaps for which the intervention of the intention of the gods became essential and for which the order of Ṛta is transformed into the order of truth and the order of sacrifice. Auspicious cosmic time for ritual actions is in regular usage and is an essential ingredient for *Puruṣakāra*.

Destiny and self-effort are equally a topic of consideration in the literature though self-effort appears to be rendered superior. Actively performed actions on specific times appear in the Vedic period whereas the reading of destiny is prevalent in the post-Vedic period. Cosmos and its activity is an intervention for a verifiable relationship between human Karma and its consequences. Destiny or *Daiva* operating as a cosmic law is considered as an effect, the cause being human action performed in some distant past. Ātman is considered as an independent element its binding leading to transmigration in various names and forms on account of the impulse of desire which create the concept of destiny. Human form though tied down to the world of activity in the form of Prakṛti which itself is perishable and carries an element of slavery and thereby confinement with the proper use of equipments can lead to the Self-form or Knowledge form of Ātman is a notion for which the self-effort is directed. Destiny effectuating by the mechanical cosmic actions working as an effect

account for the slavery of man the vision of which perhaps can give a better understanding about future could be the reason of the growth and the treatment of and for *Daiva* in the culture in the post-Vedic period. Karma in the form of self-effort or *Puruṣakāra* on the other hand is an all time topic under consideration and appears as a law of personal responsibility. Independence is a known trait of the Ātman and self effort directed towards higher planes or release with cosmic activity as a means appears the role behind the concept of *Puruṣakāra* in the culture. Fashioning of human destiny through the combination of human actions on specific cosmic time appears to be the idea behind the Correlation and vision of the past actions are to be for a glance in the past journey of the soul and not the sole idea behind the Correlation.

Jīva-Centricity

The culture holds man in the central position for a vision of his future from the outer world. The projection is inwardly out and is evident since early period in the form of the activities of the deities which are projections of human feelings, forms and actions. The Nakṣatras, the phases of the Moon and the position of the Sun are studied for practical purposes connected with sacrifices and later for Saṃskāras being instrumental for the fulfilment of human goals. Actions on part of man determined the future of man also they were believed to change the course of nature. Astrologer Garga connected the occurrence of earthquakes to human sins. The *tithis* which are astronomically angular measurements of time are expressed by Gobhila as to shorten and lengthen according to the *Dharmādharma* of man. Thereby human actions are primary or causal to bring a change in the individual or the cosmos. Prakṛti or Cosmos apart from being an effect also appears as a perceptive screen for the vision of the effects of actions. Gods are said to be the giver of fruits (Brahmasūtra 3.2.38) the concept of god in the correlation is sub served by the cosmic activity and the time bringing it forth formulating the concept of *Daiva* which is believed a fruit of human actions returned by the gods. Deities are rendered secondary as the fruit givers of the ritual actions as early in the Brāhmaṇas which promote sacrifices arranged on cosmic time serving as the joints of Prajāpati. Thereby human actions and equally the concept

of time for the performance of the actions are primarily important in the culture and the centralization of human is chiefly evident in the process.

The calculations of time for the performance of actions and the cosmological equations constituting the growth of the branch of Astronomy or Gaṇita also appears secondary on account of the human orientation of the correlation. Astronomy cultivated in the culture due to Astrology is mentioned by Scholars as Weber. Cosmology in the Veda and most of the ancient cultures is based on the Geocentric theory is a view of the modern scholars. This is believed the reason of the downfall of Astrology post-Renaissance period which rear under the Helio-centric understanding of the world and which is proved scientifically. The internal evidence strengthen the above view-points with references such as the Sun moving from the highest point of the Northern hemisphere to the Southern hemisphere and back again is not factual the turning around of the Sun with a halt in between is thoroughly inconsistent with the present understanding of the system. The Earth being an immovable fixed sphere also appears to be an observation of Astrologers like Varāha. Such inconsistency also appears in statements of Astronomer Brahmagupta and only selected few as Āryabhaṭṭa differed regarding Geocentricity and the Astrology-oriented-Astronomy prevalent then and who had perhaps coherence with the western view. Astrology reflected in Astronomy is evident in the statements of the Brāhmaṇas interpreting the Sun in the two hemispheres as being in the gods and the piṭṛs and also later in the Siddhānta texts which mention the address of the gods on the North-pole, the Meru. (Sūrya Siddhānta I.13,12.35.67). Also is evident that such observations were made from a certain fixed point so as to record such mobility in the cosmos, the fixed point being Earth is an easy consideration. Though a possible quarter from the point of view of the correlation of Jyotiṣa and Karman and also of the human orientation with the importance of actions performed with the instrumentality of the cosmic activity which could provide an explanation to the difference of opinions arising over the two periods is that the fixed point of observation of the moving cosmos around is neither from the Earth nor the Sun but from the Individual or more correctly the Individual Soul. Jīva in RV.I. 164.30 is 'individual' whereas in the Chāndogya Upaniṣad VI. 3.2.

is the 'individual soul' thereby Astrology and Astronomy in the Veda and the later literature seemingly is neither Geocentric and not at all Heliocentric though on its association with the doctrine of Karma it could be termed as *Jīva-centric*. Jīva possesses knowledge and inheres the power of perception being a part of the Supreme Ātman. Thereby the point of observation can be termed as the **point of perception** from which the Jīva who is the *seer*, perceives the world, the *seen* and Knowledge is derived from the perceptible activity around. Also Ātman as believed to be the only reality or *Satya* it is immutable thereby the point of observation is a **motionless point** which could not be a concern with the Earth which itself possess motion. The mutable is considered unreal in the Culture the transformations in the cosmos thereby is metaphoric for the understanding regarding the Self by means of symbolism and negation on account of which instances as 'Sūrya is the soul' or 'Sūrya being the Self of that which stands and moves' or even 'the Sun rising in the sky is an image of the Soul which lies within' occur in the literature. Though vision as also reflection or image can be obtained only by a stable element as also with a power to reflect or visualize which the Jīva inherently possess. The study thereby could be termed as Jīva-Centric where an effort to give a concrete form to the abstract entity appears though with the perceptible cosmos considered as a reflection or illusionary the Philosophy of the culture is **inwardly outer** with Ātman as the only reality and the Jīvātman with the aid of the cosmos around making an effort to obtain Knowledge about his own self.

Existentialism

The probability of Jīva-Centricity makes the correlation eligible for a discussion on Existentialism. From the beginning of the culture the cosmic characteristics and activities are interpreted for human future. The cosmic time which is a representation of the cosmic characteristics and activities is utilized for performing ritual actions of various kinds to sub serve the various goals of human. Cosmic time vary according to the characteristics or rather the variety of characteristics appearing in the sky follow a certain pattern which constitute the

concept of time is an observance. Actions on specific moments brought forth by the cosmic time lead man to certain planes is a belief and a practice in the culture. As the cosmic activity defined by specific characteristics follow a specific path similarly a man's motion is defined by his qualities and his activities as also work on specific cosmic moment lead him to a specific path is a basic assumption on which the concept of Existentialism occurs in the earlier culture. The light forms in the cosmos represented the activities of the deities considered superior to human form also their ordered activity in the cosmos facilitated the study of time to perform actions. The activities of the light forms perceived the form of truth (*Satya*) work on which carried man to the higher planes as heaven where the deities were believed to reside. In and later to the Upaniṣads when the Knowledge Form of human was discovered, motion to the Jīva became dependable on desire. Regaining of the original form, believed to be of light and knowledge became a subject of scrutiny, with the added angle of moral actions along with the physical ones to determine one's entity along with the authenticity of self-efforts in making one's future. In prior times morality is ascribed to cosmos in the form of Varuṇa as a moral ruler for the punishment of sins. As the human structure came to be excavated *citta* according to Yogadarśana came to be considered the human counterpart for the storage of the performed actions. Fruition of actions remain a domain of the gods which in case with the Correlation of Jyotiṣa and Karman is in connection with the cosmic counterpart as the fruit giving authority. The cause of creation is mental action in the form of desire on account of the originally Knowledge formed Jīva being subjected to ignorance (*Avidyā*) and collected karmas. Longevity, also pleasure and pain is believed to be surfacing as a result of the collected karmas and contact (*saṁyoga*) is due to ignorance (Yogadarśana II. 24) on account of which the Jīvātman faces rebirths. Time brings forth the seed and the evolution is expressed as a natural process of bringing back the modifications in the form of rebirths into the original form. (जात्यन्तरपरिणामः प्रकृत्यापूरात्। योगदर्शन, कैवल्यपाद सुत्र २) This being an explanation of the natural process of evolution in human interwoven with the cosmic activity every modified form manifesting its own characteristics and activity holds a property of reverting back to its natural form being subjected to

modifications. Perception of the past activity of the manifested form from its characteristics and the probable future by the aid of the study of the cosmic design and its activity by the motion of time is an effort attempted by the culture by means of Jyotiḥśāstra in the post-Vedic period. The manifested form holds a Prārabdha which has to be faced which can be visualized and **perception being a form of knowledge** an attempt to understand the limitations and the probabilities of the surfaced form by means of the correlation is a concern with the culture. If *Karmavipāka* appears the Natural process of Evolution in the post-Vedic the natural law made perceptible by the aid of the correlation the other part appearing from early which deals with the arrangement of actions on proper times is concerned with self-effort directed towards an Induced Evolution. Actions arranged on the order of the light forms and later they being projected as the metaphors to Brahman appear an effort on part of the culture initially in the form of a belief and later a sure notion that the future of human in its ideal sense pertains to light. Work on the order of light lead to the plane of Sattva, the heaven. The plane later connected to the state of mind depicting happiness appears evidently to be connected to the form of mind which originally is of a Sattva form as shared by the literature. Sattva is the quality of mind acquiring of which, the human form reaches a higher plane or state is a belief thereby the light forms exhibiting sattva in the cosmic body are followed. Righteous behaviour led to such a form depicting a Morality Induced Evolution. The motion of Sattva to the existence speed up the process of Evolution perceptive means for the achievement of Sattva quality is provided by the light forms. The cosmic time serves a contributory mechanism in the actual transformation. Moral conduct as a means to achieve a higher form necessitated the intervention of time as a physical as well as a psychological entity. Apart from serving a concrete basis to the Philosophy it perhaps sub served the connectivity between the universal time and the individual biological citta and its operation. The concept of relative time accords with the above idea. Action fructifies with time also is an important factor to be considered thereby the characteristically varying time is utilized to provide the motion of Sattva to the moral apparatus in human. Sattva equated with Knowledge is the original form of mind and Karma as a law of causation

an ethical side is provided by the psychical disposition of cosmos. The Evolution is an entangled one and with the biological aspect it depicts a psychological as well as a cosmic angle to it. Apart from being Moral it carries an Intellectual side in the culture, which is evident in the concept of the equable states in cosmos and a perception of unity in the diversified forms on part of human. The Correlation perhaps surpasses the definition of Existentialism extending beyond will of human, projecting the Knowledge formed supreme Ātman as the all in all force and activity inclusive of human will a product of Prakṛti with a controversial form in the Philosophy of the literature considered either real or illusionary and with the motionless Knowledge form of the Supreme Ātman and the Jīvātman the ideology of the workings of the Existence possessing a Complete Knowledge Form is perception in the sense of activity as well as knowledge. Also on account of which the Correlation seemingly extends to the explanation of the Philosophy in the culture as one connected with the advancement of the human form.

Conclusively,

By the aid of the Correlation of Jyotiḥśāstra and the Concept of Karman the culture has made an attempt for an advanced form to human as compared to his present one as a solution to the notion of future. Jyotiḥśāstra by means of cosmic actions is instrumental for such a form the generation of which is a product of self-effort of man. Motion to the future is qualitative therefore time is characterized to bring its connection with actions. The concept of gods as the fruit giving authority in the form of destiny pertains to the laws of nature on account of the working of qualitative time. The ideal future of man is on the grounds of ethics the Correlation therefore indicates a moral theory. Perception appears as a quality as well as an activity as a part of the Correlation in an attempt for the transformation of man.

Scope for Further Research

An ***advanced interdisciplinary research*** can be done amongst Jyotiḥśāstra and the Philosophy in the literature. Interdisciplinary research can also be undertaken on the **comparative correlations** of the Astrology and Philosophy of other cultures.

The study demands a research on the *possibilities of material and human sciences* existing in the Vedic and Sanskrit literature by means of the Correlation.

Research can be undertaken in the *field of Knowledge* with the use of Jyotiḥśāstra as a means of cognition as also on the mechanism of derivation of Knowledge by the aid of the Correlation. The study can be useful in the directions of the fields of *Inferential Logic* and *Perceptive Cognition*.

Modern Relevance

Jyotiḥśāstra and the Concept of Karman brought together by the culture provides a rare example of turning the abstractions of philosophy into practical empiricism and carries a relevance in the present society. Jyotiḥśāstra being a popular subject and near to common man it can be instrumental to make him understand the essence in the philosophy of the culture. On the grounds of the objections raised against Astrology and the prevalent pessimistic attitude regarding the nature of the correlation the present dissertation can provide a bridge for an access to its original form in the culture conveying the importance of self-effort of man in the making of his future.

On the background of the transgression of human life and its values with current issues as terrorism, drug addictions, human trafficking and corruption, the form of the Correlation can be an aid in the making of a cultured individual and at the mass level the making of a cultured society. The Correlation points out the limitations along with the probabilities of human life and its future. The acceptance of destiny is an aspect of the Correlation in the culture and is dealt with the employment of rectifying measures although improvisation of the vision by transcending the limitations of sensory perception appears to be the chief aim of the culture by means of the Correlation. By the observation of the *Utpāta* and the *Adbhuta* the culture received an understanding of the nature of the emotions such as fear and anxiety as the products of uncertainty and spontaneity on account of the suddenness in manifestation of any event. As an answer to this the culture discovered the gradual and disciplined workings of *perceptive knowledge* which can be acquired by an

ethical and equable frame of mind by the human for an understanding of life. The subject thereby demands to be a part and parcel of the present day educational system right from the primary and pre-primary school levels which work on the induction of knowledge to human in its very basic form. Apart from this it can be a subject of study and researches at higher levels in the concerned institutions.

The study can help restore and reconstruct the man-cosmos relationship. The present man appears outweighed on being bound to the target oriented organizations of present day for his physical sustenance and its *bright* prospects of which stress, diseases and untimely death are the probable complementary factors. In contrast the future of the Vedic man was concerned with *light* in both its senses as Prakāśa (illumination) and Laghu (speedy) since he held a sense of binding to the laws of nature for his present and future life which could afford him an advanced form. For *Kāla* as they visualized was not in terms of physical human hours but was in terms of *quality* offering them a quality life in present and in future. The Correlation can thereby serve as a message from the forefathers for the creation of a sense of binding to the nature and its laws.

The ultimate goal though is not only to contribute but also to ensure its implementation since it is one of the most basic requirements of the present world.

Bibliography

A) Original Texts

1. **Āpastamba-Dharmasūtra**, ed. A. Chinnaswāmīśāstri, Kashi Sanskrit Series No. 93, Chowkhamba Sanskrit Series Office, Benaras, 1932.
2. **Āpastamba-Gṛhya-Sūtra**, ed. Chinnaswami Shastry, Chaukhamba Sanskrit Series, Varanasi, 1928.
3. **Āpastamba-Śrauta-Sūtra**, Vols. I, II, ed. G. U. Thite, New Bharatiya Book Corporation, Delhi, First Edition, 2004.
4. **Āśvalāyana-Gṛhya-Sūtra**, ed. Gokhale Ganesh, Ananda Ashrama Sanstha, Pune. 1978.
5. **Atharvaveda-Samhitā**, ed. Satavalekar, S. D., Svadhyaya Mandala, Surat, 1957.
6. **Baudhāyana-Dharmasūtra**, ed. Umeśachandra Pāṇḍeya, Chaukhamba Sanskrit Series Office, Varanasi, Second Edition, 1972.
7. **Bodhāyana-Gṛhya-Sūtram**, ed. L. Srinivasacari and R. Shamashastry, Prachyavidya Samshodhanalaya, Mysore, 1983.
8. **Brahma-Sūtras**, Swami Vireswarananda, Advaita Ashrama, Pittorgarh, Himalayas, Fifth Reprint, 1978.
9. **Brāhma-Sūtra-Śāṅkarabhāṣya**, ed. Paṇḍikar V., Chaukhamba Vidyabhavan, Varanasi, Reprint 1998.
10. **Bṛhadāraṇyaka-Upaniṣad** with the commentary of Śāṅkarācārya, trans. Swami Mādhavānanda, Advaita Ashrama, Himalayas, Fifth Edition, 1975.
11. **Chāndogya-Upaniṣad**, trans. Swāmī Swāhānanda, Sri Ramakrishna Math, Madras, Sixth Edition, 1984.
12. **Eight Upaniṣads with the commentary of Śāṅkarācārya**, Vols. I, II, Trans. by Swāmī Gambhīrānanda, Advaita Ashrama, Calcutta, 1996.
13. **Gobhila-Gṛhya-Sūtram**, ed. Malaviya Sudhakar, Chaukhamba Sanskrit Sansthan, Varanasi, 1997.
14. **Golādhyāya in Siddhāntashiromaṇi of Bhāskarācārya**, comm. By Kedardatta Joshi, Motilal Banarasidass, Delhi, First Edition 1988.

15. **Hiraṇyakeśi-Gṛhya-Sūtra**, ed. Marulkar Shankar, Ananda Ashrama Sanstha, Pune. 1946.
16. **Jaiminīyanyāyamālā**, ed. Pandit Shivadatta Badrināth, Ananda Ashrama Sanstha, Pune. 1946.
17. **Jātaka Stories**, Vol. 1,2, ed. E. B. Cowell, the Pali text Society, London, 1973.
18. **Jyotirmīmāṃsā** by **Nilakaṇṭha Somayāji**, ed. K.V. Sarma, VVRI, Punjab University, Hoshiarpur, 1977.
19. **Kālamādhavakārikā**—with the comm. of Bhaṭṭa Vaidyanathsuri, ed. Shankarshastry Bhāradwaj, Ananda Ashram Sanstha, Pune, 1942.
20. **Kauṭīliyam-Arthaśāstram**, ed. Kangale R.P., Maharashtra Rajya Sahitya Sanskrit Mandala, Pune. 1982.
21. **Kṛsnayajurvedīya-Taittirīya-Saṃhitā**, ed. Satavalekar S. D. , Ramlal Kapur Trust, Bahalgadh, Hariyana 1983.
22. **Līlāvati of Bhāskarācārya**, trans. by K. S. Patwardhan, Motilal Banarsidass Publishers Pvt. Ltd., Delhi, First Edition 2001.
23. **Mahābhārata**, Vols. 1-8 , ed. N.G. Joshi, D. Savlaram, Mumbai, 1937.
24. **Mahānārāyaṇopaniṣad**,_Swāmī Vimalānanda, Sri Ramakrishna Math, Third Impression, 1979.
25. **Mahābhāṣya of Patañjali**, rev. Bal Shastri, Vani Vilas Prakashan, Varanasi, 1988.
26. **Mānameyodaya of Nārāyaṇa**, ed. S. S. Suryanarayana Sastri, The Adyar Library series, Vol. 105, The Adyar Library and Research Centre, Madras, Second Edition, 1975.
27. **Māṇḍukya-Upaniṣad**, tran. Swami Chinmayananda, Central Chinmaya Mission Trust, Bombay, Reprint 1994.
28. **Manusmṛti**, Vols.I,II, trans. Maitreyee Deshpande. New Bharatiya Book Corporation, Delhi, First Edition, 2010.
29. **Mīmāṃsā-Śābara-Bhāṣyam**, Vols. I-VII, trans. and comm.. by Yudhiṣṭhira Mīmāṃsaka, Ramlal Kapur Trust, Bahalgadh, Hariyana, 1984-2001.

30. **Mīmāṃsā-Sūtras of Jaimini**, text with trans. N. V. Thadani, Bharatiya Kala Prakashan, Delhi, Revised Edition : 2007.
31. **Pātañjala-Yogadarśana**, Comm. Kolhatkar, K. K., K.B. Dhavale, Mumbai, First Edition, 1951.
32. **Ṛgveda-Saṁhitā**, Vol. I-IV, ed. K. L. Joshi, Parimal Publications, Delhi, First Edition, 1997.
33. **Sarva-Darśana-Saṁgraha of Sāyaṇa-Mādhava**, trans. E. B. Cowell Bharatiya Kala Prakashan, Delhi, 2008.
34. **Sārāvāli by Kalyāṇavarman**, ed. V. Subrahmanya Shastri, Nirnaya-Sagar Press, Bomaby, Third Edition, 1928.
35. **Śāṅkhāyanagr̥hyasūtram**, ed. Sharma Sriram, Sanskriti Sansthan, Bareli 1972.
36. **Ślokavārttika of Kumarila Bhaṭṭa** with the comm. Nyāyaratnākara of Pārthasārathi Miśrā, ed. Dwarikadas Shastri, Ratna Publications, Varanasi, 1978.
37. **Śrīmadbhagavadgītā**, Goyandka Jayadayal, Geeta Press, Gorakhpur, Sixteenth Reprint 1988.
38. **Śrisūtrakṛtāṅgam-Sūtram**, Jawaharlal Maharaj, Chaganmalaji Muhta, 1935.
39. **Śuklayajurvedavājasaneyīmādhyandīnasamhitā**, ed. Satavalekar S. D. Svādhyaya Mandala, Aundh, Satara, 1947
40. **Sūrya-Siddhānta**, E. Burgess, ed. S. Jain, Oriental Book Centre, Delhi, First Edition, 2005.
41. **Tantravārttika**, Vols. I, II, Trans. Gaṅgānātha Jhā, Pilgrims Book Pvt. Ltd., Delhi, Reprint, 1998.
42. **The Aitareya-Brāhmaṇa of the Ṛgveda**, Vols.I, II, ed. Sudhakar Malaviya, Tara Printing Works, Varanasi, First Edition, 1986.
43. **The Arthasaṁgraha of Laugākṣi Bhāskara**, ed. A. B. Gajendragadkar, Motilal Banarsidass, Delhi, Reprint 1984.
44. **The Bṛhājātakam of Varāhamihira**, trans. Swami Vijñānanda, Oriental Books Reprint Corporation, New Delhi, Second Edition, 1979.
45. **The Bṛhat-Saṁhitā of Varāhamihira**, Ed. H. Kern, Bibliotheca Indica; Collection of Oriental Works, The Asiatic Society of Bengal, Calcutta, 1865.

46. **The Khaṇḍakhādyaka of Brahmagupta** with the comm. of Bhaṭṭotpala, Vol.I, II, ed. Bina Chatterjee, V. Chattopādhyaya, Bina Chatterjee, New Delhi, 1970.
47. **The Matsyamahāpurāṇam**, Part I, II, Nag Sharan Singh, Nag Publishers, Delhi, First Edition, 1983.
48. **The Nighaṇṭu and the Nirukta**, Lakshman Sarup, Motilal Banarsidass, Delhi, 1998.
49. **The Pañcasiddhāntikā of Varāhamihira**, ed. G. Thibaut, The Chowkhamba Sanskrit Series, Vol. LXVIII, Chowkhamba Sanskrit Series Office, Varanasi, Second Edition, 1968.
50. **The Sāṁkhya-Kārikā of Iśwarakṛṣṇa**, Trans. H. T. Colebrooke, Tookaram Tatya, Bombay, 1887.
51. **The Śatapatha-Brāhmaṇa**, Vols. I- IV, Ed. Maitreyee Deshpande, New Bharatiya Book Corporation, Delhi, First Edition, 2008.
52. **The Siddhānta-Śiromaṇi by Bhāskarācārya**, ed. Bānū Deva Śāstri, The Kashi Sanskrit Series No. 72, The Chowkhamba Sanskrit Series office, Benaras, 1929.
53. **The Taittirīya-Āraṇyaka**, Vols. I-III, ed. A.Mahadeva Sastri, Motilal Banarsidass, Delhi, Reprint, 1985.
54. **The Taittirīya-Brāhmaṇa**, Vols.I-IV, ed. A. Mahadeva Sastri, Motilal Banarsidass, Delhi, Reprint, 1985.
55. **The Taittirīya-Upaniṣad**, trans. A.M. Sastry, Bharatiya Kala Prakashan, Delhi, First Edition, 2004.
56. **The Tithinirṇaya of Bhaṭṭoji Dikṣita**, ed. Viśvanātha Śāstri, Chowkhamba Sanskrit Series Office, Benaras, 1940.
57. **The Yājñavalkyasmṛti**, ed. T. Ganapati Sastri, Munshiram Manoharlal Publishers Pvt. Ltd. Delhi, Second Edition, 1982.
58. **Uttarādhyayana-Sūtra**, Madhukar Muni, Sri, Āgam Prakashan Samiti, Byavar, Rajasthan, Third impression, 2002.
59. **Vaiśeṣikadarśana** with the comm. of Candrananda ed. Muni Shri Jambuvijayji, Gackwad Oriental Series, Oriental Institute, Baroda, 1982.

60. **Vālmiki-Rāmāyaṇa**, Vols. I-IX, ed. S. D. Satavalekar, Svadhyāya Mandala, Valsad, 1958-1973.
61. **Vedaṅga-jyautiṣa**, ed. R. Shamasastri, Oriental Library, Mysore, 1936.
62. **Vedāntasāra of Bhagavad Rāmānuja**, ed. V. Krishnamacharya, The Adyar Library and Research Centre, Adyar, Madras, 1979.
63. **Veṅṣamhāram**, ed. R. N. Gadre, Venus Prakashan, Pune, First Edition, 1957.
64. **Vṛddhayavanajātaka of Minarāja**, ed. Pingree David, Oriental Institute, Baroda, 1976.
65. **Yogavāsiṣṭha**, Khaṇḍa I-IX, Ed. V. L. Pansikar, Vidarbha Marathawada Book Company, Pune, Sixth Edition, 1998.

B) Modern Texts

1. Acarya Amrutachandra, **Tattvārthasāra**, Bharatiya Dnyanapeeth, New Delhi, 1944.
2. Bronkhorst, Johannes, **Karma and Teleology**, Studia Philologica Buddhica, Monograph series XV; The International Institute for Buddhist Studies of ICABS, Tokyo; First Published 2000.
3. **Complete works of Śrī Śaṅkarācārya**, Vol.I, II, Sree Sankaracharya University of Sanskrit, Kerala, 2012.
4. Dasgupta, Surendranath, **A History of Indian Philosophy**, Vol.I, Motilal Banarsidass, Delhi, First Indian Edition, 1975.
5. Dikshit, S.B., **Bhāratīya Jyotiṣaśāstra**, Aryabhushan Press, Pune, 1869.
6. Duessen, Paul, **The Philosophy of the Upanishads**, Eng. Trans. by Rev. A.S. Geden; Motilal Banarsidass Publishers Pvt. Ltd. Delhi, Reprint, 2005.
7. Eliade, Mircea, **A History of Religious Ideas**, trans. from French in English by W. R. Trask, University of Chicago, 1978.
8. Gowen, H.H., **A History of Indian Literature**, Seema Publication, 1975.

9. Hajime Nakamura, **A Comparative History of Ideas**, Motilal Banarsidass Publishers Pvt. Ltd., Delhi, First Indian Edition, 1992.
10. Hopkins, E.W., **Origin and Evolution of Religion**, Cooper square publishers, INC New York, 1969.
11. Hume, R. E., **The Thirteen Principal Upanishads**, Oxford University Press, New Delhi, Sixth Impression 2002.
12. Jogesh Chandra R., **Siddhānta-Darpaṇa**, Indian Depository, Calcutta, 1899.
13. Kane, P.V., **History of Dharmasāstra**, Vol. V, Part I, II, Bhandarkar Oriental Research Institute, Poona, Third Edition, 1994 and 2007.
14. Kaye, G.R., **Hindu Astronomy**, Cosmo Publications, New Delhi, First Published 1924, First Reprint, 1981.
15. Keith, A. B., **A History of Sanskrit Literature**, Oxford University Press, First Edn. 1920, Reprint, 1953.
16. Keith, A. B., **The Religion and Philosophy of the Veda and Upanishads**, Harvard Oriental Series, Vols. 31, 32, ed. Charles Rockwell Lanman, Harvard University Press, London, 1925.
17. Lang, Andrew, **Magic and Religion**, Longmans, Green, and Co., London, 1901.
18. Lang, Andrew, **Modern Mythology**, Longmans, Green, and Co. London, 1897.
19. Macdonell, A. A., **A Vedic Reader**, Oxford University Press, Madras, Ninth Impression, 1976.
20. Macdonell, A.A., **History of Sanskrit Literature**, Bharatiya Kala Prakashan, Delhi, First Published, 1927, Second Revised Edition, 2007.
21. Macdonell, A.A., **Vedic Mythology**, Motilal Banarsidass, Delhi, 1981.
22. Macdonell and Keith, **Vedic Index**, Motilal Banarsidass, Delhi, 1969.
23. M. Hiriyanna, **Outlines of Indian Philosophy**, George Allen and Unwin Ltd. London, Fifth Impression, 1964.
24. Moghe, G. R., **Jyotirmayūkha**, Tukaram Book Depo, Mumbai, 1984.
25. Maxm Iler, F., **Ancient Sanskrit Literature**, Bharatiya Kala Prakashan, Delhi, 1859, Revised Edition, 2007.

26. O Flaherty, Wendy, **Karma and Rebirth** in Classical Indian Traditions, Motilal Banarsidass, Delhi, First Indian Edition, 1983.
27. Pingree, David, **Jyotiḥśāstra**, A History of Indian Literature, Vol. 6, Fasc.4, Wiesbaden: Harrassowitz, 1981.
28. Paramhansa Yogananda, **Autobiography of a Yogi**, Philosophical Library, New York, 1946.
29. Raman, B.V., **Astrology and Modern Thought**, Raman Publications, Bangalore, Third Edition, 1956.
30. **Samagra Lokmanya Tilak**, Vol. 2, Kesari Prakashan, Poona, First Edition, 1975.
31. Shastri, Phulachandra, **Sarvārthasiddhi**, Bharatiya Dnyanapeeth, New Delhi, Seventeenth Edition, 2013.
32. Shastri, K., **Atharvavedīyakarmajavyādhinirodha**, Bharatiya Chaturdhana Vedabhavan Nyasa, Kanpur, 1974.
33. Swami Vivekananda, **Karma Yoga**, Advaita Ashrama, Kolkata, Thirteenth Impression, 2001.
34. Taylor, Isaac, **The Origin of the Aryans**, Caxton publishers, Delhi, First Published, 1892, First Reprint, 1988.
35. Thakkar, H., **Karmācā Siddhānta**, Kusum Prakashan, Ahmedabad, 1994.
36. Tilak, B.G., **Gītā Rahasya**, Eng. Trans. B.S. Sukhtankar, Tilak Brothers, Narayan Peth, Poona, Twelfth Edition, 2008.
37. Tilak, B.G., **The Arctic Home in the Vedas**, Tilak Bros., Pune, 2008.
38. Tilak B.G., **The Orion**, Tilak Bros., Eighth Edition, 1999.
39. Vaidya, R. V., **Astronomical light on Vedic Culture**, Makarand Sahitya, Bombay, First Impression, 1964.
40. Weber, Albrecht, **The History of Indian literature**, trans by John Mann and Theodor Zachariac, Trench Triibner and Co. Ltd., London, Second Edition, 1882.
41. Winternitz, M., **A History of Indian Literature**, Vol. I., Motilal Banarsidass, Delhi, First Edition, 1981, Reprint, 1996.
42. Yuvraj Krishan, **The Doctrine of Karma**, Motilal Banarsidass, Publishers Pvt. Ltd., Delhi, First Edition, 1997.

C) Encyclopaedias and Dictionaries

1. **Amarakośa**, ed. Sivadatta Dādhimatha, Chaukhamba, Sanskrit Prathishthan, Delhi, Second Edition, 1987.
2. **Census of Exact Sciences in Sanskrit**, Volumes I-V, Pingree David, Oriental Institute, University of Chicago, 1972-1992.
3. **Directory of Doctoral Dissertations on Sanskrit of Indian Universities**, ed. Sarma, K.V., Rashtriya Sanskrit Sansthan, New Delhi, First Edition, 2007.
4. **Encyclopaedia of Religion and Ethics**, Vol. IV, VII, Ed. James Hastings, T. and T. Clark, Edinburgh, Fourth Impression, 1959.
5. **English and Sanskrit Dictionary**, M. Monier Williams, Motilal Banarsidass, Delhi, Third Indian Edition, 1971.
6. **The Concise Oxford Thesaurus** compiled by Betty Kirkpatrick, Oxford University Press INC, New York, Seventeenth Impression, 2002.
7. **The Encyclopaedia of Indian Philosophies**, Vol.I, Potter Karl H., Motilal Banarsidass, Delhi, First Edition, 1970.
8. **The Encyclopaedia of Religion**, Vol.1,8, Eliade Mircea, MacMillan Publishing Company, New York, Collier MacMillon Publishers, London, 1987.
9. **The New Lexicon Webster's Dictionary**, Lexicon Publications, INC, 1989.
10. **The Students Sanskrit English Dictionary**, Apte, V.S., Motilal Banarsidass Pvt. Ltd., Delhi, Second Edition, 1970.
11. Ulrich's Periodicals Directory, Vols. 1-5, R. R. Bowker LLC. New Jersey, 41st Edition, 2003.

D) Journals

1. Bhattacharji S., Fatalism-Its Roots and Effects, **Journal of Indian Philosophy**, Volume 10 No.1, D. Reidel publishing company, U.S.A., March 1982.,
2. Bhattacharyya, J., The Basic concept of Nakṣatra in Ancient and Medieval India, **All India Oriental Conference XXII Session**, Gauhati, Assam, 1966.
3. Ghosal, P., Import of the term Jyotis in the Upanisadic Context, **Oriental Journal**, Volume XL, Oriental Research Institute, Sri Venkateswara University, Tirupati, 1977.

4. Kane, P.V., Varāhamihira and Utpala, **Journal of the Bombay Branch of the Royal Asiatic Society**, Volumes 24-25, Published by the Society, November 1949.
5. Kaye, G.R., The Nakṣatra and Precession, **The Indian Antiquary**, Volume L. 1921, Swati Publications, Delhi, 1985.
6. Ursekar , H.S., The Moon in the Ṛgveda, **Journal of the Asiatic Society of Bombay**, Volume 33, Published by the Society, 1960.
