

LAGADHA

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Abstract: In this article, the ancient Indian astronomer Lagadha is presented as a multifaceted personality. His traits and achievements are explained to those with a minimal knowledge of Sanskrit. The aspects touched upon are:

1. Lagadha is an ancient author.
2. Lagadha is a preserver of tradition.
3. Lagadha is a devotee.
4. Lagadha is an astronomer.
5. Lagadha is a ritualist.
6. Lagadha is a poet.
7. Lagadha is a player of words with mild humour.
8. Lagadha is a cryptic writer.
9. Lagadha is wellversed in arithmetical calculations.
10. Lagadha is a leader and populariser of astronomy.

We illustrate these with four instances for each.

1. Lagadha is the author of a small book called Vedaangajyotisham. This is the oldest available fullfledged text of Indian astronomy. It is a book of Sanskrit verses. The whole book does not exceed 7 or 8 pages. It is believed that Lagadha lived approximately three and a half thousand years ago. Though we may not be able to fix his exact age, we put forward four arguments to prove the antiquity of this work. These are based respectively on an astronomical clue, a linguistic clue, a structural clue and a content-based clue. All these four are internal evidences. We quote the actual passages in this book where these clues are available. Of these four, the first one has been elaborately explained by the historians of Mathematics.

1.1. There is a passage in Lagadha's book that leads us to the conclusion that at his time the asterism *shravishtha* was in winter equinox. The sloka runs as follows.

praapadyete shravishthaadau suryaacandramasaavudak.

Saarpaardhe dakshinaarkastu maaghashraavanayostadaa

If it is so, then by a fairly routine calculation, assigning 72 years for each degree (and therefore approximately 960 years for each asterism or constellation) one can arrive at the fact that Lagadha's period could be around 1350 B.C. It should however be remarked that in the astronomical cycle of events, the same would have been the situation at 27270 B.C. (and at 53190 B.C. etc.). But the historians rule out the possibility of so great an antiquity, for other reasons, that are not impeccable. We will now go along with them. After all, it is along the same lines, a rough date is assigned to the (still earlier) vedas also, by these scholars.

1.2. The language experts have their own way of estimating the age of ancient texts. They look at the vocabulary; they see the style; they take the grammatical aspects into account;

they compare these with other works of known periods. If we want to employ these methods for ascertaining the approximate age of Lagadha's work, we have to make the following observations. The language of Lagadha is occasionally (more often than not?) not understandable. Here is what an expert writes: "It is mostly filled with unintelligible rubbish, and leaves us in the lurch as regards valuable information" These are the words of Whitney, whom many historians of Indian texts respect very much. Even a scholar who disagreed with this opinion of Whitney and questioned, "if unintelligible, how does he decide it is rubbish?", had lamented "of obscure terms and apothegmatic language" in Lagadha's book. The more unintelligible its Sanskrit, the more ancient it is likely to be. Even where the meanings of all words are understood, there are occasions where the passage makes no sense. Here are two instances:

mrudu pancadashaashtame.

dyu heyam parva cetpaade.

What does softness have to do in this context? What sense does it make to omit a day if parva is in the quarter? Is the book so old that the text has been mutilated? Can we make intelligent guesses what the correct version would have been? Thankfully, some scholars like T.S.Kuppanna Sastry (hereafter abbreviated as TSK) have already done this job. It is for us to continue it. Now it suffices to say that such a predicament is one of the indicators of antiquity.

1.3.At the end of the book (Vedaangajyotisha) one finds a line (added later) which a novice may discard as nonsensical. But the traditionalists, who can compare this with what they learn at similar contexts of vedic recensions can decode what it is.

pancasamvatsaram prapadyete kaaryaa: kalaa dasha ca yaa:

parva savitaa vishuvam sapta.

Comparing this with a line like "ishe drugmha bhuvanam ashtaavigmshati." (at the end of the first chapter of Yajurveda) one readily makes out that this is a sequence of words occurring in the beginnings of different subsections or at regular intervals. But the point that we are driving to is different. This practice of having such lines at the end (that are really not a part of the book) is solely intended for the convenience of those who get the whole book by heart. This practice must have been there only for those books that were in use before the practice of writing had a firm root. We don't find such a thing in the Sanskrit books authored in the last 2500 years.

1.4.We look at the contents of the book, particularly the technical terms there. When most of the later astronomy books mention such terms as mesha raashi, vrushabharaashi, etc.(twelve parts of the zodiac), bhaanu vaara, somavaara, etc.(days of the week), and hora etc, we find that no such terms or their equivalents are found in Vedaangajyotisham. The units of time seem to be more or less (if not exactly) same as the ones mentioned in vedas. This adds strength to our contention that this book was composed at a time not far from the time of revelation of vedas.

All these clues pave the way for concluding that the period of Lagadha is before 1150 B.C. We do not know how much before.

2.Lagadha is a preserver of tradition. He values the vedic tradition very much. We prove this point through four instances.

2.1.He does not claim originality, though there are some items that are not available to us from anywhere else except from Lagadha and his followers. But Lagadha explicitly mentions that these are handed over to him through generations. Cf. the sentences like

kaalajnaanam pracaxate. shaastrajnai: smrutam.

It may not be just out of his modesty. He may be actually correct when he says that these facts are known in India from a remote past. Lagadha, more than in creating new knowledge, takes pride in saying that he preserves the knowledge of his ancestors.

2.2.He takes care to assert that his views are acceptable to his fellow-brahmins. He asserts that his findings are in conformity with the traditional knowledge. He is not a radical or a revolutionary thinker. This is what he writes in the beginning of his book:

vipraanaam sammatam loke

In another version of his book, the phrase is slightly modified as:

sammatam braahmanendraanaam.

Both mean the same thing. He works in tandem with other scholars of his time. The society that values traditionally acquired knowledge, accepts his astronomical records and findings.

2.3.Lagadha attaches importance to that eternal system of knowledge called veda. He adores the vedic scholars.

vidvaan vedavit ashnute.

According to him, the fruits of the knowledge of astronomy are meant for vedic scholars. The entire subject is acknowledged as an ancillary subject of vedic studies. The main purpose of the knowledge of motion of celestial objects, according to Lagadha, is that it is essential for a vedic way of life.

2.4.He subscribes to the traditional view that each asterism is governed by a presiding deity.

agni: prajaapatissomo ... naxatradevataa hyetaa:

It is seen that the entire list here is exactly as mentioned in Yajurveda, without even replacing them by their synonyms.

These observations suffice to conclude that Lagadha is a preserver of a hoary and flourishing tradition cherished and nourished by our ancient seers.

3.Lagadha, like other vedic seers, is devoted to God. This is evident from some of his passages shown below.

3.1.He starts his book with a benedictory verse of prayer.

**pancasamvatsaramayam yugaadhyaxam prajaapatim
dinartvayanamaasaangam pranamya shirasaa shucih**

Here the vedic deity prajaapati, in his capacity as the presiding deity of yuga, is saluted. The author bows his head to this form of God before embarking on his work.

3.2.He believes that one should be clean (**shuchi**), before embarking on a task like this.

3.3.This devotion has percolated to his followers as well. The one who redacts the teachings of Lagadha, also salutes the diety of time while starting his work. This verse also forms a part of the book vedaangajyotisham. The verse is as follows:

pranamyā shirasā kaalam abhivaadya sarasvatīm.

kaalajnaanam pravaxyāmi lagadhasya mahaatmanah.

We may note that in addition to the diety of time, the female diety of education, Sarasvati, is also worshipped here.

3.4.According to Lagadha, God functions through many gods. Here is a list of gods mentioned in his book: yugaadhyaksha prajaapati, kaala, sarasvati, chandra (with synonyms soma, indu) surya (with synonyms arka, ravi) vasu, tvashtaa, bhava, aja, mitra, sarpa, ashvinau, jala, dhaataa, ka:, agni, prajaapati, rudra (with synonym bhava), aditi, bruhaspati, sarpa, pitru, bhaga, aryamaa, savitaa, tvashtaa, vaayu, indraagnii, mitra, indra, nirruti, aapa:, vishvedevaa:, vishnu, vasus, varuna, aja ekapaat, ahirbudhnya, pusha, ashvini, yama.

4.Now it is time for us to provide samples from the main contents of the book. This will enable us to understand Lagadha as an astronomer. We mention four of the several topics that Lagadha dealt with . They are: 4.1. Units of time. 4.2.Time divisions of a yuga 4.3.A list of problems for which this book gives the methods of calculation. 4.4.a sample computation.

4.1.Here is a table proposed in this book:

**kalaa dasha ca vimshaa syaat dvimuhuurtastu naadike. ...
naadike dve muhuurtastu**

5 gurvaksharas = 1 kaashthaa
124 kaashtaas = 1 kalaa.
(10+ 1/20) kalaas = 1 naadikaa.
2 naadikaas = 1 muhurta.
30 muhurtas = 1 day.
61 days = 1 ritu.
3 ritus = 1 ayana.
2 ayanas = one year.
5 years = 1 yuga.

Two remarks are now in order. These terms are completely vedic. Reference may be made to the upanishadic passage:

kalaa muhuurtaah aashtaashca ahoraatraashca sarvashah.

ardhamaasaa maasaa rutavassamvatsarashca kalpantaam.

Lagadha, who is fond of whole integers, and usually avoids fractions, has here made an exception. One naadikaa is made up of ten and one twentieth of kaashtaas. However he has deliberately avoided fractions in those parts of the table which more laymen would

have to apply in their daily life. This is the reason why his year has 366 days, more than the actual (and known to him through vedas) 365 and a quarter.

4.2. How many periodical astronomical events take place in a yuga? According to Lagadha, there are

5 solar years
67 lunar siderial cycles
1830 days
62 synodic months
1860 tithis
135 solar nakshatras
1809 lunar nakshatras and
1768 risings of the moon.

Later interpreters have discussed about the accuracy of these assertions. These are rounded off integers of the actual numbers. For example, it is known that 62 synodic months are exactly 1830.8965 days; Lagadha has ignored the fractional part.

4.3. Here is a partial list of astronomical ideas described in Lagadha's book: The daily nakshatras and tithis with their ending moments, the hour-angle of the sun at the ends of parvas and tithis, the hour-angle of shravishtaa with the lagnas, etc, ``have been given by ingenious rules'' that enable us to calculate them easily everyday. A practical way of measuring time is described. (Nowadays we have advanced clocks to do this job.) For each asterism, the presiding deity's name is mentioned. A list of fierce ones, and a list of cruel ones among these is given. (These may not have any value to the present day astronomers.) The number of risings of shravishtaa in a yuga is calculated as 1835. Some other ideas touched are: variation in the daytime, beginning of the yuga-period, tithis in which ayanas can begin, method to calculate the tithi in which vishuvas occur, method to calculate the part of the day in which parva ends, method to calculate the total number of parvas(full moon days) lapsed so far in a yuga, method to find the nakshatra at any parva, method to calculate the nakshatra at a given tithi, method to calculate the time of beginning of the nakshatra current at the end of a given tithi, method to calculate the part of the day at which a given tithi ends, method to calculate sun's nakshatra at any time, correction for the siderial day, need for two extra lunar months in each yuga, method to calculate tithis yet to elapse in a ritu, and so on.

4.4. Here is a sample of computation taught in this book: Multiply the tithis gone after a parva by 11. Add it to the parts of the nakshatra current at the end of the parva. Divide by 27. Take the remainder. Use it in the Jaavaadi series. This gives the nakshatra current at the tithi. (Translation following TSK)

5.Lagadha attaches great importance to the vedic rituals called yajnas. The three pillars of vedic spirituality are karma (rituals), jnaanam (knowledge) and bhakti (devotion). Lagadha takes care to highlight all these three in his book. We cite the four lines where yajnas are mentioned.. The first talks about the purpose of writing this book. The second is about one of the uses of deities of stars in the yajnas. The third is about the importance

of these rituals in the vedic lore. The last one is about the importance of astronomy in these.

5.1.This book is written in order to help to determine the actual time of performance of vedic rituals. **Yajnakaalarthasiddhaye.**

5.2.The names of these deities serve one more purpose. The performer of yajna bears this name on that occasion. **Naxatradevataa etaa etaabhir yajnakarmani**

5.3.The vedas have indeed been revealed for the sake of the performance of sacrifices. (All other uses of vedas are secondary.) ``**Vedaa hi yajnaartham abhipravruttaa:**” The word hi here means that it is a well known fact.

5.4.It is he who knows astronomy that knows the vedic rituals. **yo jyotisham veda sa veda yajnaan.**

6.Lagadha is not merely a scientist, but also a poet. His work consists of 36 verses in one recension and 44 in another, many of the verses being common to both. As a poet he employs similes, metaphors, wordpuns, and the like to add charm to his scientific exposition that may otherwise become unappealing. Now we see some instances.

6.1.While delienating the importance of the subject of Astronomy among various ancilliary subjects of study in the vedic lore, he writes:

yathaa shikhaa mayuuraanaam naagaanaam manayo yathaa.

Tadvad vedaangashastraanaam jyotisham muurdhani sthitam.

This verse has become very popular nowadays, because many authors have quoted it in their general books on ancient mathematics. Here two similes have been mentioned. First is that the crest is on the head of the peacocks. The second is that a crown-jewel is on the head of the cobra. Similarly, Astronomy is ``on the head” of the subjects of study. By these similes, he wants to convey three things: 1.Astronomy is the splendrous part among the entire study materials; after all, it is the study of shining objects in the celestial system, as are the crest of the peacock and the jewel on the serpant-hood. 2.It is the interesting and attractive part of the study. Just as the peacock is admired for its crest, and the serpant is admired for its jewel, education is admired because of this subject. 3.Just as the crest lies above all other limbs, and the hood-jewel lies above all other parts of the body, this subject is kept above all other subjects. In short, the three items of equality between the compared objects are splendour, beauty and placement.

6.2.The poet in Lagadha comes out more forcefully in the beginning, in the end and right in the middle. In the very first verse, the poet personifies the yuga. If the God is an embodiment of the yuga-period, then the sub-periods like years, seasons and days become His limbs.

6.3.A poet shines with a larger vocabulary. Moreover, the constraints of the verse-meter will force a poet to go for synonyms. Lagadha excels in this art. He uses the words nakshatra, ruksha, bha, and stru, synonymously. (By the by, the English word star may have come from the Sanskrit word stru with the same meaning.) He uses the words indu, paulastya, soma and chandramaa as synonyms for the moon.

6.4.As a good poet, he employs a variety of meters. Most of Lagadha's book consists of verses composed in anushtup-shloka meter, with eight syllables in each quadruplet. There is one verse in vidyunmaalaa meter, where all the thirtytwo syllables are long ones. The last verse is in indravajra meter. There is another with a slight variation thereof, called upajaati meter. His effort to a strict adherence to the metrical restrictions is clear from the phrase dinartvayanamaasaangam in the very first stanza. The meaning is: Day, season, ayana and month are the limbs. In prose, we prefer to rearrange them as day, month, season and ayana, in the increasing order of duration. Lagadha has changed this order in two occasions, just to suit the convenience of the meter. However, we come across some violations of meter-related rules, most probably because it has been mutilated by many writers over many centuries, with too many variations.

7.Lagadha has shown a good mastery over words, particularly the ones with double meanings. We explain this through four examples.

word	first meaning	second meaning
veda	revealed scriptures	knows
carita	motion	moved about
kaala	time	the god of time
parva	the full moon day	a fortnight

Occasionally these double meanings result in humour. However Lagadha's humour is always mild.

7.1.This is the last line of the work. **yo jyotisham veda sa veda yajnaan.** He knows the yajna-rituals, who knows astronomy. The word veda occurs here as a verb meaning "knows". In the same verse the first line is: **vedaa hi yajnaarthamabhipravruttaa:** Here the same word veda occurs as a noun. The sentences can be combined: One should know Astronomy, to understand yaaga, which is the very purpose of the vedas. The occurrence of the noun veda and the verb veda in a single verse contributes to a mild humour.

7.2.Lagadha uses the word carita in two meanings, that are closely related to each other. His verse is given below. The repetition if the first quadruplet again as the third, is meant to draw our attention to this pun.

Somasuuryastrucaritam vidvaan vedavidashnute.

Somasuuryastrucaritam lokam loke ca santatim

One who understands the motion of the moon, the sun, and the stars, attains the worlds of the moon, the sun and the stars. In this sentence, the object of knowledge coincides with the adjective of the world attained as its fruit. The charm in this coincidence is enhanced by the word caritam that qualifies both, in its two different meanings. If their motion is studied, the world in which they move about is attained. We may further add that in the same verse the word "world" is also employed twice, first to denote the other worlds like Suryaloka and Chandraloka, and next to denote the mankind in this world, acceptability by whom is mentioned here as a fruit of knowledge.

7.3.The word kaala usually denotes the Lord of death yama, probably because he keeps the record of time. Therefore when Lagadha salutes the Kaaladevataa in the beginning of his book, some commentators write that Kaaladevataa is none other than the Yamadharmaraja. The existing koshas and dictionaries are in favour of this. Therefore a mild humour is felt in the following verse of vedaangajyotisham:

**pranamyā shirasā kaalam abhivaadya sarasvatīm.
kaalajnaanam pravakshyaami**

The meaning is: ``After saluting kaala, I am going to describe the knowledge about time”.

7.4.The word parva has its primary meaning as full moon day. It is employed in this meaning by Lagadha at least four times. But it also means the fortnight (consisting of fifteen days) as seen in the usage of the word parvasandhi. Lagadha accepts this meaning of the word parvan in one of his verses. But no humour results, because the two meanings are at two different passages. Similarly Lagadha uses the word Raashi in two meanings, heap and number, in two different contexts.

In summary, Lagadha takes advantage of word-puns also.

8.Lagadha writes cryptically at times. It helps him in achieving brevity, in enhancing curiosity, and in avoiding dullness. Occasionally however it baffles the commentators.

8.1.Look at this verse: **jau draa gha: khe ...**These are the abbreviations that Lagadha uses for the names of the stars. All these are of single syllables. They are selected syllables of the full names, one for each star.

8.2.He uses very short words, with one or two syllables, profusely. Here is a list of some single syllable words employed in this book: dvi, tri, shat, sva:, syaat, syu:, tu, ca, hi, ka:, sa:, ya:, te, tat, yat, dyu, stru, bham, tau, dve, yaa:, saa.

8.3.There are many words or passages in Vedaangajyotisha whose correct meanings are still debatable. Here we cite a few. (1) In the line ``Rridu pancadashaashtame” what is the meaning of the word ridu? Is there a mistake in this word? (2)In the line ``suryaan maasaan shadabhyastan” TSK has modified it as ``staryaan maasaan”. Which is the correct reading? Why? (3)In the stanza that starts with ``dyu heyam.h” the researchers widely differ in interpreting. Whose interpretation is close to the text? (4) In the stanza starting with ``syu: paadordham tripaadyaa yaa” which one is the correct reading? (5) For the words aavaapa and udvaapa, whose meaning is correct? (6)Has Lagadha used bhutasankhyaa, as claimed by some? (7)Among the meanings provided to the word yugalabdham, which one is likely to be intended by the author? (8) In the line ``yogam dinaikaadashakena tadvat” is anything else lurking, as suspected by TSK? And so on.

8.4.``The rules are couched in archaic, technical and terse language”, writes TSK. In the verse starting with ``caturdashimupavasatha:” there is a clearly visible flaw of prosody. Is anything missing here?

9.For Lagadha, Arithmetics and Astronomy are intimately related.

9.1. The word ganitam for arithmetics and the word jyotisham for astronomy are mutually substitutable in one context. In the passage **tadvat vedaanga shaastraanaam jyotisham murdhani sthitam**, Lagadha himself has allowed a modification **ganitam murdhani sthitam**. This shows that Lagadha considers both Mathematics and Astronomy as the most important among the ancillary subjects of vedic studies (the others being, phonetics, grammar, prosody, etymology and ritual science.) Does he mean that these two are one and the same? Not likely. Because in his tradition, they have been listed separately. As early a treatise as Taittiriya Braahmanam, mentions that an astronomer and a mathematician are different as professionals: **prajnaanaaya naxatradarsham** and **viinaavaadam ganakam giitaaya** are the lines there. If they are different, are both counted among the vedaanga subjects? It cannot be so, because the number of vedaanga subjects is fixed as six. There are two ways to resolve this problem. First view: For Lagadha, ganitam and jyotisham are synonyms. In those days, the entire mathematical canopy was meant for astronomy. Second view: Mathematics is not the same as Astronomy. Even in Chaandogya upanishat, raashividya and nakshatravidya are mentioned separately. Therefore these two verses of Lagadha, convey in two different ways that both Mathematics and Astronomy are important subjects. How can the same set of words be subjected to two interpretations? There again lies the cleverness of the poet. Let us explain. Astronomy is one of the six vedaangas. Mathematics is not so. But it is developed in many of the vedaangas. For instance, in prosody, Theory of Binary Number System is developed. In Kalpa (ritual Science) the theorem of Hypotenuse (nowadays attributed to Pythagorus) is explained. In jyotisham rudiments of Trigonometry are applied. This list can be extended. All these happened in India many centuries before Christ. Bodhayana's algorithm for rational approximation of irrational numbers, Pingala's dealings with the number zero, all these belonged to that ancient era, in different vedaangas. Therefore it is correct if Lagadha claims that in every ancillary subject of the vedic literature, Mathematics is kept at the top position. This is similar to a statement of a Nobel Laureate that in every branch of science, only that part is proper science, which has been illustrated mathematically. The verse ``yathaa ...ganitam murdhani sthitam'' is therefore interpreted as follows: Just as many peacocks are adorned by the crests on their heads, and just as many king-cobras are adorned by jewels on their hoods, many vedaangas are adorned by a top position for Mathematics. Contrast this with the previous interpretation reproduced below: Just as a peacock carries a crest on its head, and just as a serpent carries a jewel on its hood, so is Astronomy lying on the top of vedaangas. The main contrast is as follows: (1) If a peacock is likened to the full body of vedaanga subjects, then its crest is likened to Astronomy. (2) If there are many peacocks that are likened to many vedaangas, (one each), most of them are adorned by crests that are likened to Mathematics. The difference between these two statements is crystal-clear. Because Lagadha wants to make both these assertions, he has two versions of this verse, one in Rik-jyotisham, and the other in Yajur-jyotisham (the only difference being the replacement of ganitam by jyotisham and viceversa).

9.2. Occasionally general arithmetical problems are discussed. For instance, the rule of three, is explained by a verse:

ityupaayasamuddesho bhuuyopyenam prakalpayet.

jneyaraashigataabhyastam vibhajejjnaanaraashinaa.

Its meaning is: The known result is to be multiplied by the quantity for which the result is wanted, and divided by the quantity for which the known result is given.

9.3. In Lagadha's book on Astronomy, Arithmetics plays a major role. The following table of technical terms gives a rough idea of items used:

raashi	Number (positive integer)
Yoga	Addition
vihina	Subtracted by
Una,shesha	Remainder
Gunita, abhyasta	Multiplied by
Vibhajanam	Division
Bhinnam	Fraction
Bhinna-apanaya	Rounding off to an integer.
Naadikaa-pramaanam	Volume size to define a time-unit called naadikaa
Upaaya-samuddesha	Rule of three
ekaantara	Alternating
heyam	To be omitted
jaavaadi	Using addition modulo five.
labdham	Quotient

9.4. Incidentally the units of volume are also discussed. Palam is a unit of weight. 50 palams of water make one Adhakam. 4 Adhakams make one dronam, whereas one fourth of an Adhakam is called a kudavam. 13 kudavams make a naadika. The same word naadikaa is used both as a volume unit and as a time unit. This is because, the naadikaa time is the time required by a naadikaa-volume of water in a specially designed vessel (whose description is to be taken from elsewhere) to drain out completely. This common unit name is still in use in both the senses.

10. Last but not the least, is the fact that Lagadha is a leader, with many followers, interpreters, commentators and admirers. We now make four remarks on this aspect.

10.1. In this book itself, we find a verse, probably composed by one of his students. **kaalajnaanam pravakshyaami lagadhasya mahaatmanah.** Here the word mahaatmaa means an eminent person. The author of this shloka is acknowledging that the subject matter of this book is the discovery of the eminent sage Lagadha.

10.2. Here are some quotes about this book of Lagadha.

“These verses would have remained obscure and unexplained forever if we have not received light from an unexpected quarter, ..., Surya prajnapiti and Jyotishkaranda”.- R. Shamasastri in the introduction of his book.

“In the course of oral transmission of the text through several generations of the adhvaryu priests over a period of nearly 3500 years, it is quite natural that many verses

came to be handed over to the present generation often in erroneous and corrupted forms” – S.Balachandra Rao in his book “Indian Mathematics and Astronomy”.

“Vedaangajyotisha, the astronomical auxiliary of the vedas, is the earliest Indian text devoted exclusively to the treatment of astronomy” – K.V.Sarma in his preface to the edition by T.S.Kuppanna Sastri.

10.3..This book has attracted the attention of many scholars in the later period. Here is a partial list, based on the information provided by the last one mentioned below.

Period	Book/Author	Remarks
--	Artha sastra	Follows it for almanac making.
--	Paitaamaha siddhaanta	Refers to Lagadha’s system.
B.C.	Suryaprajnapti, a Jain work	Almost reproduces in Praakrit language.
1834	Weber	First edition of both recensions together.
1877	Thibaut	Deciphers a few difficult verses
1896	S.D.Dikshit	Marathi interpretation of some verses.
1907	Lala Chote Lal	Own interpretation to all verses.
1907	Sudhakara Dvivedi	Edited with an old Sanskrit commentary of Somaakara.
1914	Bal Gangadhar Tilak	Criticisms and suggestions for interpretation.
1916	Samikkannu Pillai	Discusses the Calendar part only.
1936	Shamasastri	Sanskrit Commentary and English translation.
1984	Kuppanna Sastri	Critical edition with almost thorough translation and notes.

10.4.As a good populariser of his subject of study, Lagadha mentions many advantages of studying his book. (1)Unless performed in the prescribed correct timings, the yajnas will not be fruitful. Astronomical knowledge provided in this book is essential for this purpose. (2)“**jyotishaam ayanam punyam**”. It is meritorious. One obtains a lot of punyam by studying this. (3)This subject is on the top of the six vedaangaas. (4)It is so respectable a subject that one has to be pure and clean while studying it. “**pranamya shirasaa shuci:**”.(5)One who learns the celestial motions will be doubly rewarded. In this world he will be bestowed with a continuing progeny. Later he will attain the worlds of Chandra and Surya.

Conclusion. Several ancient Indian Mathematicians were simultaneously poets, cryptic writers, researchers, expositors, teachers, traditionalists and leaders. Lagadha is one among them.