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A NATURE DEITY? THE ṚGVEDIC SAVITṚ REVISITED

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The problematic identity of the deity Savitṛ in early Vedic religion has sparked more than a century of discussion. Harry Falk, for instance, argued that this god, whose name literally means "Impeller", can be identified with the Milky Way and associated with the rainy season. Others have suggested that he becomes visible in the zodiacal light or crepuscular rays. The aims of this paper are to review the most important theories about Savitṛ's manifestations in nature in Ṛgvedic times and to reassess whether and in what ways different natural phenomena and celestial luminaries may have been associated with this deity. In discussing the theories proposed so far, I not only consider the Vedic sources but re-evaluate the archaeoastronomical arguments with modern software. As it turns out, there is no conclusive evidence that Savitṛ was associated with any single phenomenon or luminary at all. Rather, he was an anthropomorphic deification of what was perceived as a certain "cosmic" or "natural" force.

INTRODUCTION

The problematic identity of the god Savitṛ (or Savitar, literally 'impeller') in early Vedic religion has sparked more than a century of discussion.[1] The god does not appear to have any Proto-Indo-European or Proto-Indo-Iranian predecessors. Mainly due to the fact that in later times he was clearly understood as (a deification of) the sun, scholars in the nineteenth and early twentieth centuries assumed that this must have been the case in Vedic times as well.[2] This was also fully consistent with the then-current "nature-mythology paradigm",[3] in which attempts were made to assign each deity to a natural force or phenomenon. While the paradigm, which easily tended towards oversimplification

1 I want to thank Marion Rastelli, Thomas Kintaert, Vitus Angermeier, Raik Strunz, and the two anonymous reviewers for their helpful feedback on an earlier version of this paper. I also want to thank Sarah Kiehne and Albion M. Butters for checking my English and Thomas Schobesberger for his astronomical advice.

2 For a very short introduction to Savitṛ, see Jamison & Brereton I: 44–45 and Oberlies 2012: 159–161; for a more comprehensive description, see Macdonell 2002 [1897]: 32–35 (with a caveat). For an overview (still up to date) of the state of research, see Falk 1988: 5–7 (see also Anghelina 2013: 91–93).

3 For the historical background of this paradigm, see Arvidsson 2006: 63–123. A recent "revival" of this paradigm is found in Anghelina 2013: x: "My interpretation claims to be a powerful theory, according to which the Vedic gods, who are the essential part of the Vedic religious system, are treated in a systematic, coherent way with respect to their astronomical significance. Therefore, even if it could be shown that a god was wrongly identified with a certain star or constellation, the present theory implies that the nature of that god would still have to be considered celestial, and, therefore, one should find another star that better fits the description of that particular god."

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and overschematization,[4] had already begun to decline before the beginning of the last century,[5] the search for possible manifestations of the Vedic gods in nature continued.

True to his name, Savitṛ has impelled many thinkers to develop other theories in order to explain his multifaceted nature.[6] Hermann Güntert (1923) suggested that Savitṛ becomes visible in the crepuscular rays. Another theory, formulated by Stanisław Michalski (1954), associated Savitṛ with another nocturnal phenomenon, dubbed the "zodiacal light".[7] Björn Merker (1988: 39–40) and Catalin Anghelina (2013: 91–100) speculated that Savitṛ may have been Venus (or, according to Anghelina, more likely Mercury), the planet that appears as the morning and evening star. Currently, the most widely accepted theory among scholars is probably that of Harry Falk (1988), who argued (1) that this god may manifest as the Milky Way and (2) that this manifestation also indicates a connection between the Milky Way (and, consequently, Savitṛ) and the start of the rainy season.[8] On occasion, one still encounters the theory that Savitṛ has *always* been the sun and that no development has ever taken place (e.g. in Parpola 2000).

Only some of these theories were innovative and argued in more detail, most notably those of Falk and Michalski. The aims of this paper are to review their theories and to reassess whether and in what ways different natural phenomena and celestial luminaries may have been associated with Savitṛ. Following a brief introduction, I will first discuss Falk's arguments (Sections 1 and 2), before briefly turning to Michalski's as well as Güntert's generally neglected theories (Sections 3 and 4) and presenting my own tentative interpretation of the Vedic evidence (Section 5) and conclusion (Section 6). To corroborate their theses, Falk and Michalski also utilized astronomical arguments, which I will review in detail. To this end, relevant Vedic passages referring to Savitṛ will also be reconsidered. An exhaustive review of all of the (philologically) rather well-studied and often-translated sources will not be undertaken, however, as it is not the aim of this paper to draw a complete portrait of the deity Savitṛ.

In the discussion of Falk's theory, I avail myself of the advantages of modern software in order to reproduce his astronomical calculations of the Milky Way (see Appendix). The new simulations illustrate that the movements of the Milky Way relative to other phenomena of the sky are more complex than previously assumed. It will be shown that while the identification of Savitṛ with the Milky Way might still have some validity, the astronomical and textual evidence supporting their

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4 Jamison and Witzel (1992: 52) conclude: "It is rather discouraging constantly to encounter, at the end of a stimulating and nuanced discussion fully utilizing the textual resources, the same shortcut taken: 'X must then be the sun' and so on."

5 See Arvidsson 2006: 124–131.

6 To summarize:
- Savitṛ = sun / nocturnal god of birth: Bergaigne 1883: 55–57
- Savitṛ = Sūrya's power personified or the "soul" of the sun: Macdonell 2002 [1897]: 32–35; Srivastava 1963 (for similar theories by other scholars, see Srivastava 1963: 48–49)
- Savitṛ = the Impeller, a (purely) abstract deity: Oldenberg 1917: 64–65; Oldenberg 1897; 1905
- Savitṛ = the sun: Hillebrandt 1902: 113–134 (and many others after Hillebrandt)
- Savitṛ = a manifestation or "hypostasis" of Varuṇa: Güntert 1923: 155–169; Dandekar 1939
- Savitṛ = zodiacal light: Michalski 1954
- Savitṛ = Venus or Mercury: Merker 1988: 39–40; Anghelina 2013: 91–100
- Savitṛ = Milky Way: Falk 1988.

7 The impact of this zodiacal light on ancient cultures has of late drawn renewed scholarly attention; see, for instance, Latura 2012 and 2018, and below in the section "Zodiacal light".

8 According to Falk, Savitṛ's association with the rainy season was further responsible for the employment of a verse addressing Savitṛ (a so-called *sāvitrī*) during the initiation of the Vedic student; in the early Vedic religion, this verse was first taught around the beginning of this particular time of the year (i.e. in the so-called *upākaraṇa* or *upākarman* ritual, which was preceded by the *upanayana*).

association with the rainy season or water in general is weak. Also, Savitṛ's development into a sun-god cannot be explained with the help of astronomical arguments but must again be traced back to one of his "cosmic functions", that is, his being the initiator of daybreak.

I have endeavoured to make my exposition of the Vedic texts and the astronomical background as comprehensible as possible. But since the matter is quite complicated and necessitates a great deal of imagination, I ask the reader for indulgence and patience while following my presentation.

Before delving into the intricate astronomical theories, let us quickly recapitulate the most important facts about Savitṛ. In the Vedic language, *savitṛ́* (or *savitár*) is an agent noun derived from the root *sū* (or secondary *su*) 'to impel', which has to be distinguished from the homophone *sū* 'to give birth to'.[9] Thus, *savitṛ́* literally means 'impeller', 'arouser', or 'stimulator'. While some have argued that he is a deification of an *impelling* phenomenon of nature – usually the (morning or evening) sun – others, first among them Oldenberg (1897), maintained that he is primarily a functional or agent god, as his name suggests.

It is evident from the texts that his name indeed describes his main activity: he is the god who *impels* all (diurnal) beings to rise, to move, to procreate, and to rest at night. The sun, the wind, and the rivers are also moved by his power. His outer appearance is sometimes described as well: most conspicuously, he has a golden tongue and complexion, in addition to golden arms, hands, and eyes. He has a golden coat and is equipped with a golden chariot (see Falk 1988: 11; Macdonell 2002 [1897]: 32). Furthermore, occasionally he is located in a specific region of the sky (sometimes driving a chariot) and he is often associated with certain times of the day. It is thus very unlikely that he was a purely abstract god in the early Vedic religion.[10]

Primarily due to the fact that he was definitely understood to be the sun for most of his later existence, it is reasonable to ask whether he may already have been associated with a natural phenomenon in Ṛgvedic times. From early descriptions it seems possible that Savitṛ could be identified with a phenomenon of nature or a celestial body, but the evidence from that period suggests that it could not have been the sun (see already Oldenberg 1905). In the Ṛgveda (ṚV), Savitṛ is associated with the intermediate space (*antárikṣa*) or atmosphere, as opposed to the sun-god, who belongs only to the sunlit heaven (Falk 1988: 9–10), thus obviating a special connection with the night (see Falk 1988: 12–14). In particular, he appears to have been associated with evening, primarily after sunset, and sometimes with morning, primarily before sunrise (see Falk 1988: 12–13). For these reasons, the persistent claim that Savitṛ already manifests as the sun in the ṚV is more than doubtful – the sun is inarguably not visible at these times. This then raises the question: what could he have been, if not the sun?

1. THE MILKY WAY

According to Harry Falk, in the early Vedic religion Savitṛ was not identified with the sun, but rather with the Milky Way. Seen from northern India at the end of the second millennium BCE, the Milky Way purportedly appeared in the night sky in a very special way. According to Falk, around the time of the summer solstice, it was visible to its full extent twice each night. Its arms pointed roughly towards the western and eastern horizons and thus also in the directions of the sunset and sunrise, which at that time are the farthest apart (Falk 1988: 18). Savitṛ, who

9 For these roots, see Werba 1997: 324–325.

10 This is Hillebrandt's (1902: 113–134) main argument.

'has the sun on the reins' (*sū́ryaraśmi*, ṚV X 139.1), thus "pulled the sun out" of the horizon in the morning and let it set again in the evening. This observation is partly correct: even though the light of dawn soon outshines the Milky Way, under good conditions both can sometimes be observed simultaneously (as is shown, for instance, in Figure 1).

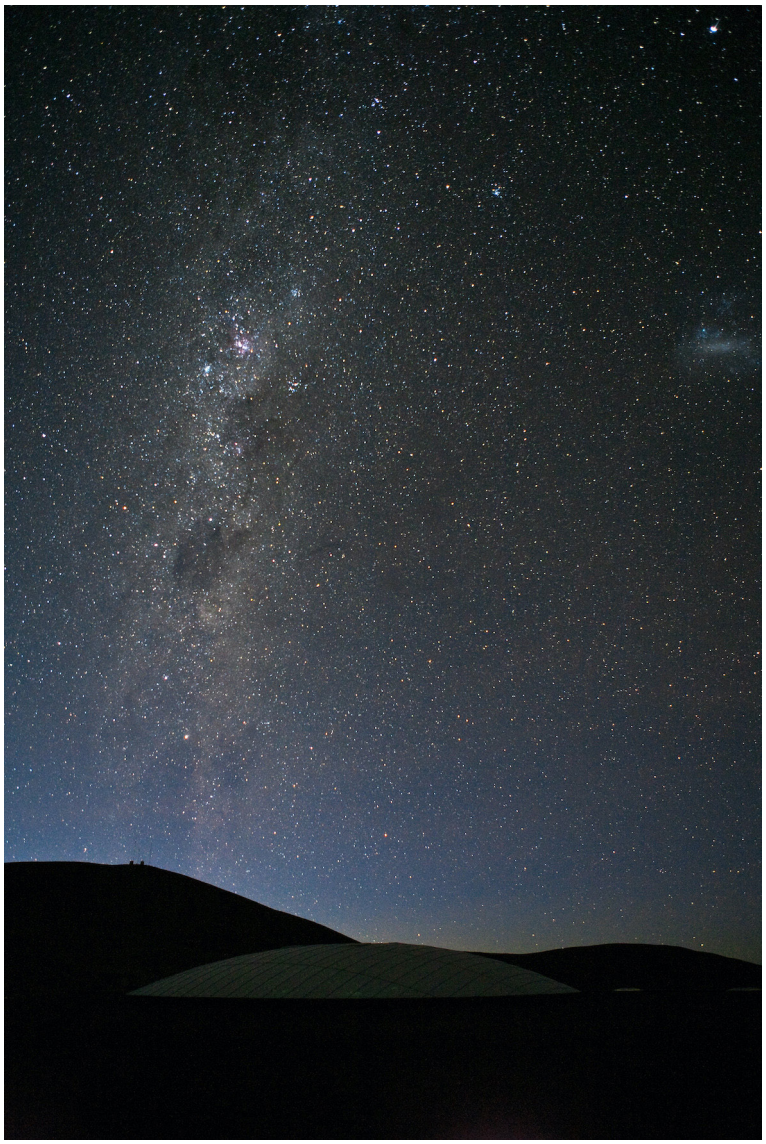

Figure 1 The Milky Way and the first light of dawn. Photo by ESO 2010.[11]

According to Falk, this special phenomenon was also associated with the period beginning with the summer solstice. During this event, which in the northern hemisphere occurs sometime between June 20th and June 22nd, the sun's path reaches its maximum height and days are

11 Note that this and the following pictures were taken by professional photographers under ideal conditions. Although poor air quality and light pollution were certainly not a big problem in the early Vedic period, it must be taken into account that the visibility of celestial objects was much worse most of the time even then. This issue will be addressed below.

at their longest. After the solstice, the path of the sun descends with each day, shifting south towards the horizon, and the days again become shorter. As this half of the year roughly coincides with the June/July onset of the rainy season, it was associated with a plenitude of food and fecundity. In light of this, Falk interpreted Savitṛ primarily as a deity representing the character of this period, that is, as a god of invigoration, productivity, and prosperity (see Falk 1988: 21). According to Falk's interpretation, the Milky Way was one of the deity's most important manifestations.

In stark contrast to the early Vedic evidence, most post-Ṛgvedic texts simply identify Savitṛ with the sun. In fact, already in the ṚV there are some passages that seem to associate or even identify him with the morning sun,[12] for instance, by stating that he is the one who gives Sūryā to her husband (ṚV X 85.9) – a role presumably played by the bride's father. Sūryā herself is in turn described in other passages as the daughter of the sun-god, Sūrya.[13] This shows that Savitṛ was possibly connected in some way with the sun in late Ṛgvedic times (see also Oldenberg 1905: 264; Oberlies 2012: 159), even though Oldenberg and Falk have clearly demonstrated that it is impossible to simply *equate* Savitṛ and the sun (or even the sun-god) in the ṚV. But how could this elusive deity change from appearing as the Milky Way to being the same as the sun? If we, for the time being, assume that he really was identified as the Milky Way, why did he lose his starry appearance in later texts?

According to Falk, this transition was made possible by the change of astronomical and geographical conditions. Falk asserts that over the course of time, an astronomical phenomenon known as "precession" considerably altered the Milky Way's nocturnal path. As Vedic culture simultaneously spread further south, Savitṛ's "hands" (the "ends" of the Milky Way) at some point ceased to point in the directions of sunrise and sunset. For these two reasons, he could no longer be identified with the Milky Way (Falk 1988: 19). In his analysis, Falk further suggests that the transition may have been facilitated by the fact that both are said to have a "golden" colour (*hiraṇyáya*).[14]

By using modern software (which, it should be noted, was not readily available more than 30 years ago), I was able to revise Falk's astronomical observations.[15] As it turns out, they are only partially correct; Falk was apparently misled by the simplified schematic diagrams on which he based his theory.[16] Due to its circular shape, the arms of the Milky Way always touch the horizon and are never raised, except if the horizon itself is distorted – as was the case in the easily confusing illustrations that Falk used. As the illustrations in the Appendix show, the Milky Way indeed points in the direction of sunrise around the middle of the year.[17] It does not, however, as Falk writes (1988: 17–18), disappear between evening and morning or touch the northern horizon. Quite the opposite: not only does the sun reach its zenith in summer, but so does the Milky Way.[18] When the

12 Cf. ṚV VII 63.3, V 81.2 and I 35.9; see Oberlies 2012: 159.

13 Sūryā is often identified with the goddess Dawn, Uṣas (e.g. in Macdonell 2002 [1897]: 125). Lommel 1956: 98 states that Sūryā's manifestation in nature is unknown. Since Oldenberg (1912: 53 ad VII 69.1), the identification of Sūryā and Uṣas has been doubted. According to Oberlies (1998: 240; 2012: 173), she is the goddess of the grey heaven which can be seen *before* Uṣas, the red or tawny dawn, appears.

14 In Vedic culture, the sun and the stars may have been understood to have the same colour; see Falk 1988: 11.

15 All technical details are given in the Appendix below.

16 These can be found in Witzel 1984: 269, 271; see below, Appendix, Figure 5.

17 In particular, see Table 1 and the preceding paragraphs explaining it.

18 Cf. the illustration of the Milky Way at midnight at the beginning of July in Table 1; see Appendix. In fact, this would explain even better why Savitṛ is regularly said to "stand erect" (*ud+sthā*; Falk 1988: 11) with extended but loose (*śithirá*; ṚV VII 45.2; Falk 1988: 18) arms (pointing to the horizon, not upwards).

summer solstice occurs in the northern hemisphere, the sun reaches the top of the heavenly vault at noon and the Milky Way reaches it at midnight. This fact also contradicts Falk's assertion that the Milky Way traverses the sky at medium altitude (1988: 19).

It must be stressed that the movements of the Milky Way in relation to the horizon are rather complex. As Falk (in part) correctly observes, the Milky Way appears "with arms raised" in the evening around the time of the summer solstice; as the illustrations show, at that time the Milky Way is very low above the horizon, possibly creating the impression of a person with "embracing" arms.[19] But it also occupies a similar position at other times of the year (for instance, at midnight during the months of February and March, or just before sunrise in November and December). Furthermore, the Milky Way touches the zenith not only on the summer solstice, but also each night for the following six months; it is best aligned with the sun's course at midnight in September, and in November and December, it points in the direction of the sunset – the time specifically associated with Savitṛ. All these observations show that one should be very careful in establishing a connection between the Milky Way and the sun at any one point of the year.

According to Falk, Savitṛ's transition from the Milky Way to the sun was caused by the precession, a slow shift in the orientation of the earth's rotational axis, which takes about 25,800 years for a complete cycle (see Kelley & Milone 2011: 66–67). A second cause was the spread of Vedic culture, that is, a change of the observers' location. However, the illustrations in the Appendix show that neither the precession nor the location of the observers had a great effect on the appearance of the night sky in this area (see Appendix, Table 2).

2. WATER AND THE MONSOON

As we have seen, the various positions of the Milky Way alone cannot account for any connection with the rainy season. In order to corroborate his thesis, Falk further adduced various passages purported to connect Savitṛ with water or the monsoon.[20] I will confine myself to discussing those passages which cannot be explained by the supposition that Savitṛ is responsible for the general order and movement of the universe (e.g. ṚV II 38.2,4 and VII 38.2; see Falk 1988: 15). The first three relevant passages all specify Savitṛ and water. It will be seen, however, that their being mentioned together tells nothing about the god and his connection with water or even the rainy season.

The first verse is part of a hymn addressed to Savitṛ and describes how various kinds of creatures have been allotted their place in the cosmos:[21]

19 Falk 1988: 24: "das abends erschienene, nach oben, an den Rändern erhobene Sternenband". See the first illustration in Table 1.

20 Since Falk neither explicitly considered the context of the verses he cited nor established strong connections between them, his presentation of the material is somewhat arbitrary. In order to facilitate their discussion, I have rearranged them here (in a way which, I believe, does not harm Falk's argumentation – the construction of which is more or less based upon a mere accumulation of material).

21 Unless otherwise indicated, translations are my own. Since I am not a native English speaker, they may sometimes appear clumsy or stylistically unattractive. I hope, however, that the reasons for my deviations from the standard translations will become clear against the background of the translations and the secondary literature being considered. For translations from the ṚV, I generally base myself on Jamison & Brereton I–III, taking into account Geldner's (I–III) translation and annotations as well as Oldenberg's Noten (1909/1912).

ṚV II 38.7

tváyā hitám ápyam[22] *apsú bhāgáṃ, dhánvā̆n$_u$v ā́ mṛgayáso vítasthuḥ /*
vánāni víbhyo nákir asya tā́ni, vratā́ devásya savitúr minanti //

That which belongs to water has been placed by you among the waters as a share; the wild beasts have spread across the dry land;
the forests are for birds – no one violates these commandments of the god Savitṛ.[23]

Obviously, this is a quite general statement about the deeds of Savitṛ. Nevertheless, from it Falk tried to construe for Savitṛ a "watery share which no one can diminish".[24] That the verse lists Savitṛ's activities without any emphasis, however, implies to me that no specific connection exists between Savitṛ and water.

In a verse from the Atharvaveda (AV VI 1.2), Savitṛ is in passing said to be *antáḥ síndhau* 'inside the river'. It is not clear to me how this is to be understood, because *síndhu* can refer either to a 'stream' in general or to the river Indus.

Another verse from the AV appears to promise better evidence upon which to establish a connection between Savitṛ and water. It is part of a short hymn addressed to the Waters as deified beings:

AV VI 23.3

devásya savitúḥ savé kárma kṛṇvantu mā́nuṣāḥ /
śáṃ no bhavantv apá óṣadhīḥ śivā́ḥ //

At the impulsion of the god Savitṛ, men should perform the deed (i.e. the ritual).
The Waters shall become pleasant for us, the herbs auspicious![25]

Here, the reason for the mention of Savitṛ and the Waters is not their connection by means of the rainy season – as a matter of fact, the entire hymn AV VI 23 is addressed to the Waters. The phrase *devásya savitúḥ savé* 'at the impulsion of god Savitṛ' can already be found in the ṚV (V 82.6) and has been an oft-repeated and rather "casually" used formula ever since.[26] In this case, its use is most likely motivated by the following mention of the 'ritual' (*kárman*) that is to be performed.

Apart from these – in my view – inconclusive interpretations, Falk also draws attention to Savitṛ's connection in some passages with a special deity called Apāṃ Napāt, the "Child of the Waters" (ṚV I 22.6, II 31.6, VI 50.13, X 149.2). This deity is envisaged as a kind of fire hidden in the water. Contrary to Falk's statement, however, it is not at all clear whether in the Ṛgvedic hymn the two deities are identified or not (see Oberlies 2012: 126, 385 n. 134). Even if they were, this would establish a connection with Agni, the god of fire, rather than the Waters or the rainy season.

Nevertheless, a certain mythic connection between Savitṛ and water can be observed. As is also stated in the famous River Hymn (ṚV III 33), which will be discussed below, in days of yore Savitṛ

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22 Subscripts represent sounds which must have been present when the verse was composed but were lost due to the application of *sandhi* or other sound changes. In providing them in the case of the ṚV, I have taken into consideration the metrical reconstruction made by van Nooten and Holland 1994.

23 Cf. the translation in Jamison & Brereton I: 457; Falk 1988: 16; Geldner I: 326 ("Wildjäger" for *mṛgáyaso-*).

24 Falk 1988: 16: "RV 2.38,7 spricht vom, durch dich in die Wasser versetzten wässerigen Anteil', den ihm niemand schmälern kann."

25 Cf. the translation in Falk 1988: 15.

26 Cf. the many references under *devasya tvā* and *devasya savituḥ* in Franceschini & Bloomfield 2007.

was responsible for the release of the primordial waters that filled the great ocean surrounding the world. This is, in any case, the central statement in the verses (ṚV X 149.1–2) referred to by Falk:

ṚV X 149.1–2

savitā́ yantráiḥ pṛthivī́m aramṇād, askambhané savitā́ dyā́m adṛṃhat /
áśvam ivādhukṣad dhúnim antárikṣam, atū́rte baddhā́ṃ savitā́ samudrám /1/
yátrā samudrá skabhitó vy̯áunad, ápāṃ napāt savitā́ tásya veda /
áto bhū́r áta ā útthitaṃ rájo, ’a̯to dyā́vāpṛthivī́ aprathetām /2/

1. Savitar brought the earth to rest with his fastening straps; in the place with no prop Savitar made heaven fast.
Savitar has milked the boisterous midspace like a stallion, (has milked out) the sea bound within the unfathomable (realm).
2. Where the propped-up sea flooded forth – Savitar knows that, o Child of the Waters –
from there was the world, from there was the airy realm arisen; from there heaven and earth spread out.[27]

The hymn containing the above verses is concerned with the creation of the universe – not the monsoon. It is easily understood that the force that caused the release of the primordial Waters was Savitṛ, the impeller of everything (remember that Savitṛ also moves day and night as well as all creatures).[28] As such, he is of course also the impeller of the rivers of the present day.

Savitṛ's connection with the flowing power of water is further referenced in the famous River Hymn of Viśvāmitra (ṚV III 33), in which the poet asks the two rivers Vipāś and Śutudrī to cease their flow in order to allow the Bharata forces to cross. The verse in question refers to the myth of Indra and his archenemy Vṛtra, who in primeval times captured the rivers but was then killed by the heroic god. In their dialogue with Viśvāmitra, the rivers remember this occasion:

ṚV III 33.6

índro asmā́ṁ aradad vájrabāhur, ápāhan vṛtrám paridhíṃ nadī́nām /
devò ’nayat savitā́ supāṇís, tásya vayám prasavé yāma urvī́ḥ //

Indra with the mace in his arms dug us channels: he smashed away Vṛtra [/the obstacle] surrounding the rivers.
God Savitar of the lovely hands led (us): at his forward thrust we journey widely.[29]

The last *pāda* of this verse – left untranslated by Falk – explains why Savitṛ is said to have led the rivers: it was, again, his "impulsion" (*prasavá*) which made them move. No direct connection with the rainy season can be found here.

The only two verses where Savitṛ is explicitly connected with a rainy season phenomenon – the approaching clouds – are part of a hymn exclusively devoted to Savitṛ. Here the god is said to control the movement of the clouds:

ṚV IV 54.5–6

índrajyeṣṭhān bṛhádbhyaḥ párvatebh̯yaḥ, kṣáyāṁ ebhyaḥ suvasi pastíyāvataḥ /
yáthā-yathā patáyanto viyemirá, eváivá tasthuḥ savitaḥ savā́ya te //

(You impel) those whose chief is Indra [= Maruts] from the lofty mountains, and you impel the dwelling places that provide homes [= clouds?] for them.
Just as they spread out while flying, just so do they stand still for your impulsion, o Savitar.[30]

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27 Tr. Jamison & Brereton III: 1634. Cf. Geldner III: 381–382; see also Oldenberg 1912: 358.
28 ṚV IV 53.7, V 82.9, etc.; see Oldenberg 1897: 478.
29 Tr. Jamison & Brereton I: 514. Cf. the translation in Falk 1988: 15; Geldner I: 373; Oldenberg 1909: 244–245.
30 Tr. Jamison & Brereton I: 639. Cf. the translation in Falk 1988: 15; Geldner I: 485 (with a divergent interpretation, per his note: "Den Göttern hat er die Berge als Wohnsitz zugewiesen, den Menschen das Stromland"), following Oldenberg 1909: 307.

It should be clear by now that these verses also fail to provide conclusive evidence. While Savitṛ is inarguably the driving force behind the movements of the rivers, the fact that he also impels the rain clouds does not necessarily establish a direct link with the rainy season.

Following his argumentation, Falk further interpreted an entire Savitṛ-hymn, ṚV II 38, against the background of his findings (Falk 1988: 28–30). As has been recently noted, however, this is by no means conclusive. The hymn – which for reasons of space cannot be discussed here – may also simply be interpreted against the background of the evening, a time with which Savitṛ is regularly associated (see Jamison & Brereton I: 456).

So far, neither the movements of the Milky Way in relation to sunrise and sunset nor the textual evidence adduced by Falk allow for the establishment of any direct connection between Savitṛ, the monsoon, or even water in general. In all cases where one of the latter two is mentioned, it is the impulsion of the god which is most important. Savitṛ is never mentioned alongside them without this connector. While Savitṛ may indeed be mentioned in the context of procreation and/or the times associated with it (i.e. night and the rainy season), this is owing to his power and not to any inherent relation with that time. Savitṛ must be active throughout the entire year, for without him everything would come to a stop.

3. ZODIACAL LIGHT

Despite his less than compelling argumentation, Falk's idea that Savitṛ is the Milky Way has a certain appeal. The fact that Savitṛ can be identified with a nocturnal phenomenon in the first place is thanks to Stanisław Michalski, however. In an apparently never-cited paper, which was published in the *Journal of the Bihar Research Society* in 1954, Michalski argued that Savitṛ should be associated with the so-called zodiacal light. Zodiacal light is a phenomenon that occurs when sunlight is reflected by interplanetary dust accumulating on the ecliptic (Kelley & Milone 2011: 138). It appears as a faint and roughly pyramid-shaped glow near the horizon and can only be seen in a clear sky after the sun has set and the light of dusk has disappeared. It is brightest during the hour after dusk and the hour before dawn, appearing like a column extending upwards, tilted at the angle of the ecliptic. Figure 2 illustrates an extremely bright zodiacal light as seen from a mountain; most often, it is much fainter, if visible at all.

Michalski has shown the remarkable similarities between the descriptions of Savitṛ and the zodiacal light. I here confine myself to summarizing his findings and presenting some of his most relevant examples:

1. Savitṛ is said to "enclose" or "go around" the night "on both sides".[31] – The zodiacal light is brightest just after dusk and before dawn (see Michalski 1954: 20).

2. Savitṛ is said to have golden eyes, arms, a chariot, etc.[32] – The zodiacal light is often more yellowish than the Milky Way (Michalski 1954: 20–22).

31 Cf. ṚV V 81.4c (*utá rā́trīm ubhayátaḥ párīyasa* /): "And you wander around the night on both sides." Cf. Jamison & Brereton II: 764; Geldner II: 85.

32 Cf. ṚV I 35.4cd (*ā́sthād ráthaṃ savitā́ citrábhānuḥ kṛṣṇā́ rájāṃsi táviṣīṃ dádhānaḥ* /): "Savitṛ the bright-beamed has mounted the chariot, exerting his power into the black mists." Cf. Jamison & Brereton I: 141; Geldner I: 43.

Figure 2 The zodiacal light rising above the red gleam of dusk. Photo by ESO/Y. Beletsky 2009.

3. Savitṛ's light goes straight upwards; Agni's light is likened to it.[33] – Especially in summer, the zodiacal light radiates upwards in a rather straight line; one could compare it to a fire from which a column of smoke rises (Michalski 1954: 23–24).

4. Savitṛ has a characteristic *amáti*. The exact meaning of this word, translated by Michalski with 'image', is not absolutely clear.[34] Probably it means something like 'appearance, apparition' or 'emblem' (see Jamison & Brereton II: 933). According to Michalski (1954: 25), the *amáti* can be seen in the sky and would represent the pyramid-shaped form of zodiacal light, "leaned" against the heavenly vault. In his examples, however, Michalski supplements the word 'sky' in every verse; apparently, *amáti* is actually never mentioned alongside a word for 'sky' in the ṚV. The identification of *amáti* as the image or apparition of Savitṛ in the sky is nevertheless plausible.

Now, if one is looking for an alternative to Falk's theory, this explanation of Savitṛ's appearance is obviously very attractive. The zodiacal light indeed fits the description of an upright apparition in the night sky following sunset and preceding dawn better than the Milky Way. One could also see the deity's two loose arms with their broad hands (ṚV VII 45.2, II 38.2) in the two zodiacal lights appearing at the beginning and the end of night. The fact that the zodiacal light appears comparatively low above the horizon would also explain why, as mentioned above, Savitṛ is said to fill the *antárikṣa* 'intermediate space' between the earth and heaven.

But if we assume that Savitṛ was the zodiacal light, what was his relationship with the Milky Way? In fact, the Milky Way is always visible when the sky is clear enough to see the zodiacal light. The two phenomena are likely to come very near to each other and may even cross in a rather spectacular way, as illustrated in Figure 3. If Savitṛ was associated with either of the two phenomena, would not the Vedic poets have noticed their very striking intersection?

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33 ṚV IV 6.2 (*ūrdh*$_u$*vám bhānúṃ savitéva aśren méteva dhūmáṃ stabhāyad úpa dyā́m* /): "He (scil. Agni) has braced the upright beam like Savitṛ, like a builder he propped the smoke up to the sky." Cf. Jamison & Brereton I: 568; Geldner I: 427; Oldenberg 1909: 272–273.

34 See Mayrhofer 1992: 95: "Gebilde, Erscheinung, Bildnis".

The role that the zodiacal light and the Milky Way – as well as their intersection – might have played in various (ancient) cultures has come under a scholarly gaze in recent years. George Latura (2018: 201) argued that in Ancient Egypt, it was observed that the zodiacal light heralded the daily return of the sun-god Ra, an event of great religious significance. He also argued that in Ancient Greece, the "X" which results from the crossing of the zodiacal light and the Milky Way was seen as the World Soul (ψυχὴ τοῦ κόσμου) referred to by Plato in his dialogue *Timaeus* (Latura 2012). In Plato's text, the celestial cross (which was later re-interpreted as a Christian symbol) is described in a somewhat opaque fashion and may allow for more than one explanation.

Figure 3 The Milky Way crossing the zodiacal light in the form of an "X". Photo by B. Tafreshi 2015.

Yet, this is not the place to delve into Latura's interpretation of the ancient Egyptian or Greek evidence. Keeping to the topic of this paper, it shall suffice here to note that in the case of Savitṛ, no crossing is ever mentioned. While it might be tempting to interpret the Milky Way and the zodiacal light as the two golden arms of Savitṛ, there is no evidence to support this. As we have seen above, the Ṛgvedic references are simply not explicit enough. The question arises whether an explanation based on zodiacal light does not ultimately raise more problems than it solves.

4. CREPUSCULAR RAYS

That the Milky Way and the zodiacal light are only visible at night is obvious. However, Savitṛ's activity evidently extends beyond clear starlit nights. In the ṚV, there is no indication that Savitṛ only heralds the sun before the appearance of dawn or twilight and vanishes as soon as the first rays of sunlight become visible. In several passages, we find mention of his *kétu* ('sign' or 'flag'), which either signals the rising of the sun or is perhaps even itself the sun. In a hymn describing the events at dawn, we read the following:

> **ṚV IV 14.2**
> *ūrdhváṃ ketúṃ savitā́ devó aśrej, jyótir víśvasmai bhúvanāya kṛṇván /*
> *ā́prā dyā́vāpṛthivī́ antárikṣaṃ, ví sū́ryo raśmíbhiś cékitānaḥ //*
> The god Impeller has braced the upright beacon, making light for the whole world.
> He/it has filled heaven and earth, the interspace – the Sun/sun showing himself widely with his/its rays.[35]

Is it perhaps the sun which is braced by Savitṛ? Apart from the parallel construction of the two hemistichs, there is no definite indication that the *kétu* and the sun are identical. In another, closely related hymn, the situation is equally ambiguous:

35 Cf. Jamison & Brereton II: 577; Geldner I: 433.

ṚV IV 13.2

ūrdhvám bhānúṃ savitā́ devó aśred, drapsáṃ dávidhvad gaviṣó ná sátvā /
ánu vratáṃ váruṇo yanti mitró, yát sū́ryaṃ divy à̀roháyanti //

The god Impeller has braced the upright beam, brandishing his banner like a warrior seeking cattle. Varuṇa, Mitra (and the other Ādityas?) proceed according to their commandment when they cause the Sun to mount into heaven.[36]

Here again, the "beam" (*bhānú*) and the sun could be the same. The fact that their appearance is in both passages described in a certain order, however, may suggest that they are in fact two different entities. In a hymn to the Aśvins, Savitṛ's beam appears independently from the sun:

ṚV VII 72.4

ví céd ucchánty aśvinā uṣā́saḥ, prá vām bráhmāṇi kārávo bharante /
ūrdhvám bhānúṃ savitā́ devó aśred, bṛhád agnáyaḥ samídhā jarante //

When the dawns light up, o Aśvins, the singers offer you their formulations.
The god Impeller has braced the upright beam. The fires awaken aloft through the firewood.[37]

There is no mention of the sun in this verse or any other verse of the hymn. All we learn about the beam is that it appears around the time of dawn. Is it possible that Savitṛ's beam only appears *before* the sun rises? Could it be that even though Savitṛ also appears at night (and certainly is not the sun itself), Savitṛ can be seen in the bright and white twilight, distinguished from the red or tawny dawn? A similar interpretation was actually suggested by Hermann Güntert (1923: 158–260) in 1923. While his main hypothesis that Savitṛ is a "hypostasis" of Varuṇa (whom Güntert tried to establish as the "Weltkönig und Heiland") can safely be ignored, the argument that this god might appear in the rays of the rising and setting sun – the so-called crepuscular rays – is not so easily dismissed.

As Güntert points out, there is a close parallel to another morning deity with beautiful limbs in the ancient Greek religion: most of those who read Homer's Epics are familiar with "Rose-fingered Eos" (ῥοδοδάκτυλος Ἠώς), the beautiful goddess of dawn. Savitṛ, too, is said to have beautiful fingers.[38] Most often, of course, the poets highlight Savitṛ's standing posture and his raised golden arms. Nevertheless, the resemblance is striking. For Güntert, "the raised hands of the god with the outstretched gold fingers are the rays of sun that shine on the horizon at the rising and setting of the sun, especially when only a part of the sun disk is visible, which is interpreted as the palm of the hand".[39] That Savitṛ is said "to be fond of the rays of the sun" (*sū́ryasya raśmíbhiḥ sámucyasi,* ṚV V 81.4), too, can be interpreted in favour of this identification.

While the crepuscular rays may be interpreted as fingers (see Figure 4), Güntert does not explain what exactly Savitṛ's (only two) arms might be or how the shape of these rays can explain that the god is regularly said to be standing while raising his arms. Still, we could presume that Savitṛ at times was also seen in this natural phenomenon (even though there are no crepuscular rays at night). To an extent, the zodiacal light and the crepuscular rays resemble each other: both can only be seen at twilight or at night, and both originate from the sun. In the next section, however, we will come to understand that these manifestations were in all likelihood nothing more than possibilities.

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36 Cf. the very similar translation by Jamison & Brereton I: 575–576; cf. also Geldner I: 433.
37 Cf. Jamison & Brereton II: 974; Geldner II: 247.
38 He is *svaṅgurí*; cf. ṚV IV 54.4.
39 Tr. Güntert 1923: 159–160: "Die erhobenen Hände des Gottes mit den ausgestreckten Goldfingern sind die Sonnenstrahlen, die bei Auf- und Untergang der Sonne am Horizont aufleuchten, insbesondere, wenn nur ein Teil der Sonnenscheibe sichtbar ist, der als Handfläche gedeutet wird."

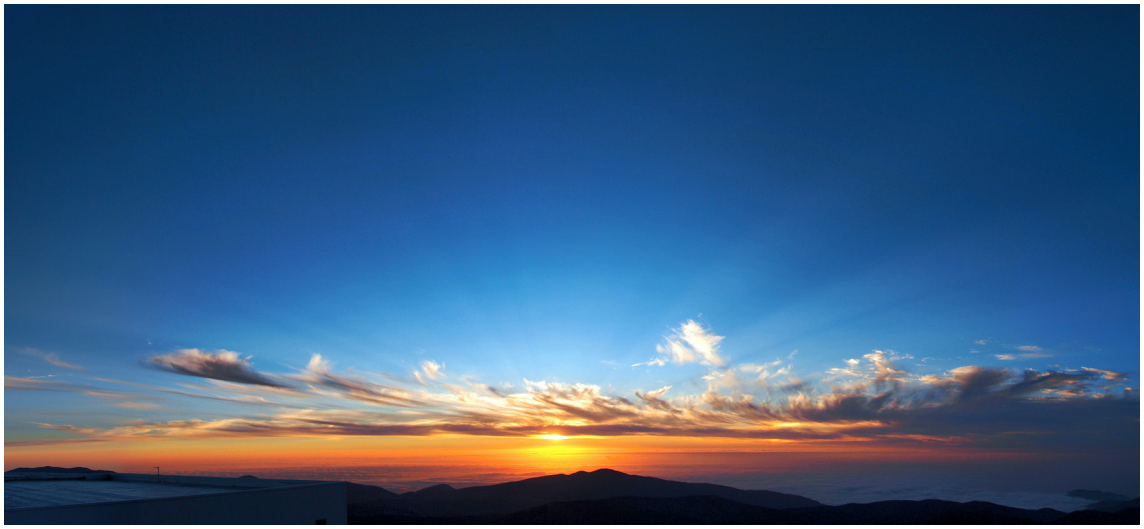


Figure 4 The crepuscular rays. Photo by ESO/R. Wesson 2014 (cropped).

5. AN ANTHROPOMORPHIC DEITY

Although Michalski's theory would explain Savitṛ's appearance very well, it does not disprove that this god could not also be seen in or as the Milky Way or the crepuscular rays, and there is little reason to assume from the outset that this never could have happened. As we have discussed, if one is looking for a celestial, nocturnal manifestation of Savitṛ, the zodiacal light seems to be the better candidate. However, we cannot assume that Vedic people would have been as strict in their identifications as we are today (or, perhaps, Plato was). They might have even believed that the three phenomena originated from the same source (i.e. Savitṛ); after all, they also imagined fire and the sun to be manifestations of one and the same thing (or deity).

It must not be forgotten that whatever Savitṛ was in the beginning, he managed to become the sun in later times. It should therefore not be ruled out that for the Vedic people, Savitṛ could on occasion also become visible as the Milky Way or any other observable striking celestial phenomenon, such as the finger-like rays of the rising or setting sun. Throughout the whole year, night is bordered by two of the most impressive and religiously significant events of the day: sunrise and sunset. Before and after each, under good conditions, at least two other phenomena attract some attention in the sky, namely, the Milky Way and the zodiacal light (not to mention the moon and stellar constellations). Bearing in mind that Savitṛ is the "impeller" who makes people rest at night and awake around dawn,[40] it would make sense if more than one of the impressive coincident phenomena and/or luminaries could be interpreted as manifestations of Savitṛ himself or his power.

But how can we be sure that he was actually associated with one of these phenomena? Is it necessary to continue the search begun by the early nature-mythologists? As seen above, Savitṛ's connection with a natural phenomenon was in all likelihood only secondary (at least in the beginning), if it existed at all. Even for the people who created, heard, used, and preserved the hymns of the ṚV, his ambiguous manifestation in nature may have been of little conse-

40 ṚV I 124.1, II 38, etc.; see Oldenberg 1897: 478.

quence. In order to explain his outer appearance, therefore, I suggest looking at his two most salient characteristics independently: his golden colour and his typical gesture. As will hopefully become clear in the following, there is no need to explain these two characteristics by the colour and shape of a single, celestial object or phenomenon.

First of all, I want to once again stress that Savitṛ is not only active during beautiful mornings and evenings or on starlit nights, but that he does his work unremittingly. While the names of gods like Agni, Vāyu, and Uṣas also denote their natural manifestations (fire, wind, and dawn), the same cannot be said of Savitṛ. Savitṛ does not come and go with the Milky Way, the zodiacal light, or the crepuscular rays, none of which appear to have dedicated words in the ṚV. Indeed, most natural phenomena potentially associated with Savitṛ are not visible throughout the entire year – often because the sky is simply overcast, as is generally the case at the time of the monsoon, for instance. Furthermore, despite his association with the evening and the night, he also gestures with his golden hands at other times of the day. In several hymns, he is connected with the three pressings of the Soma sacrifice throughout the day (cf. ṚV III 56.6–7, 54.11, IV 54.6). To give but one example:

ṚV III 54.11

hiraṇyapāṇiḥ savitā́ sujihvás, trír á divó vidáthe pátyamānaḥ /
devéṣu ca savitaḥ ślókam áśrer, á́d asmábhyam á́suva sarvátātim //

Golden-handed Savitṛ has a lovely tongue when he presides over the rite three times a day –
and when you have directed the signal-call to the gods, o Savitṛ, then impel wholeness to us![41]

Since the second pressing of Soma occurs at noon, this verse demonstrates that Savitṛ is basically always golden-handed, not just in the morning or in the evening. "Golden-handed" thus seems to be an epithet used regardless of context. While the presence of the lovely tongue in the above verse can be explained by the fact that Savitṛ gives a signal-call to the gods in the next half-verse (cf. ṚV VI 71.4), his golden hands appear simply to be mentioned because they are part of his natural appearance.

Of course, this observation fails to explain how Savitṛ acquired his epithet in the first place. We may suspect that Savitṛ originally obtained his colour from a golden (shining or glowing) celestial apparition – but if this was the case, it is impossible to determine exactly which one. It must also be noted that while Savitṛ is clearly associated with the golden colour, he is not the only golden deity in the ṚV (nor is his chariot the only golden chariot). The chariots of Indra, the Aśvins, and the Maruts are golden (ṚV I 139.3, IV 44.4–5, VI 29.2, 66.2, VIII 1.24, 5.29, 5.35), Varuṇa and the Maruts wear golden clothes (ṚV I 25.13, V 55.6), and – keeping the list short – Indra himself is said several times to be of golden colour (ṚV I 7.2, V 38.2, X 105.7). Considering that the gods are regularly associated with gold and golden objects, Savitṛ's colour is not as conspicuous and peculiar as is sometimes assumed – at least, it does not necessarily have to be explained by a natural phenomenon.

The same holds true for Savitṛ's typical gesture and the breadth of his hands, which cannot simply be derived from the shapes of the Milky Way, the zodiacal light, or the crepuscular rays. Indeed, I believe there is no need to explain these characteristics by a natural phenomenon or a celestial object, as it is simpler and much more natural to instead explain them by a human action.

41 Cf. Jamison & Brereton I: 542; Geldner I: 398 (n.: "Vollzähligkeit (*sarvátāti*) ist die volle Zahl der Söhne (vgl. *sárvavīra*) oder das volle Leben").

It is likely that Savitṛ's gesture was simply the expression of his typical activity (see Oberlies 1998: 222, n. 343). In one verse, Savitṛ's act is likened to the gesture of a priest called Upavaktṛ:

ṚV VI 71.5

úd ū ayāṁ upavaktéva bāhū́, hiraṇyáyā savitā́ suprátīkā /
divó róhāṃs y aruhat pṛthivyā́, árīramat patáyat kác cid ábhvam //

And up has Savitṛ raised his arms like the Upavaktṛ, the golden ones with their lovely fronts.
He has mounted the heights of heaven from the earth; he has brought to rest whatever flying beast there is.[42]

The Upavaktṛ mentioned in this verse is literally the one 'who calls upon' or 'addresses', a mysterious kind of priest whose ritual function must have been to prompt another priest, the Hotṛ (see Minkowski 1991: 118–127). As Minkowski has noted, the priestly function of the Upavaktṛ – as well as his gesture of raising his arms – does not have an "exact reflex in the classical ritual" (Minkowski 1991: 121; see, however, Heesterman 1994: 270), and it was probably taken over by the Praśāstṛ and Brahman in post-Ṛgvedic times. Nevertheless, we can imagine that for the Ṛgvedic poets, raising the arms with the palms facing forward was a typical gesture to "impel" other beings – priests, humans, or even animals – to recite, speak, or move. As Savitṛ is *the* impeller, it would be logical that he also makes *the* impelling gesture. The fact that he has broad hands (*pṛthúpāṇi*)[43] might be explained by the same logic: the impelling gesture is more impressive and effective when performed with big hands (or, perhaps, spread fingers?).

6. CONCLUSION

As it is extremely difficult to substantiate any identification of Savitṛ with a single natural phenomenon, I propose the following explanation. Savitṛ, the god Impeller, was generally (and probably also originally) understood as the anthropomorphic deification of what was perceived as a certain "cosmic" or "natural" force, and not of a natural phenomenon or celestial luminary. This force could especially be observed at the beginning and end of the day and night – at the transition from darkness to light and vice versa, and could be felt as the drive to awaken and be active at daybreak and to rest at night. Even then, however, his force could still be felt, for when the day's work was done, it was time to procreate: an activity which was not only associated with but sometimes even restricted to night-time.[44] That the arousing and procreative function of Savitṛ was and also remained very important, especially outside the cosmic and ritual sphere (i.e. in more "profane" contexts), is reinforced both by the fact that he was succeeded by Prajāpati, the "Lord of Progeny", and by his reappearance (with the very same function) in a much later text, the Bṛhad-Āraṇyaka-Upaniṣad (VI 4.19).

Being an anthropomorphic deity, Savitṛ performed his activity in the way humans do: by raising his arms and making an impelling gesture. The result of this gesture is most clearly visible at the beginning and the end of day, when the sun rises and sets. It is very well possible, but in my view unverifiable, that his body, apparel and equipment were imagined to be golden because of the golden colour of various celestial apparitions visible around those times. In this case, the colour of the effect might have been transferred to its cause – its "impeller". However, even if Savitṛ

42 Cf. Jamison & Brereton II: 873 (*patáyat kác cid ábhvam*: "whatever is flying, even the formless [=wind]"); Geldner II: 174 ("jedes fliegende Ungetüm").
43 Mentioned only once in ṚV II 38.2.
44 See, e.g., Āpastamba-Dharmasūtra II 1.16.

obtained his colour from a celestial phenomenon, this obviously did not establish any strong link with this phenomenon itself. This is not only corroborated by the fact that it is nowhere stated which phenomenon this would be, but also by Savitṛ's later development: even in the Brāhmaṇas (see Falk 1988: 7–9), Savitṛ is not yet universally equated with the sun, showing that at that time his "cosmic identity" was not (yet) fixed – or, perhaps, rather unimportant.

As we saw in this paper, scholars have felt compelled to develop an entire range of theories about Savitṛ. This was possible because the ambiguity of the texts allows for several interpretations. To me, it is conceivable (if not verifiable) that Savitṛ could be "projected" onto a full range of celestial objects even at the time of the ṚV. Sometime before the Ṛgvedic hymns were composed, the idea of a golden deity with outstretched arms making an impelling gesture was conceived, possibly because of Savitṛ's association with the changes in light observable before and after sunrise.

How exactly this happened, however, is simply beyond our ken. Some poets, while contemplating clear and starry nights, may have spotted him in the Milky Way or in the zodiacal light – it is even possible that somebody might have seen him in a stellar constellation, an explanation that has not yet been proposed.[45] Others may have found him stretching his golden arms or fingers in the crepuscular rays. At some point, someone opined that Savitṛ could be the sun itself, and for reasons still unknown, this identification proved to be the most convincing, overriding his association with the night. Others may hardly have imagined him at all but simply felt his presence in the impulses to awaken, to sacrifice, to rest in the evening, and to procreate at night.

PRIMARY LITERATURE AND ABBREVIATIONS

All Vedic texts have been tacitly adapted to the *International Alphabet of Sanskrit Transliteration*.

Āpastamba-Dharmasūtra: *Dharmasūtras. The Law Codes of Āpastamba, Gautama, Baudhāyana, and Vasiṣṭha. Annotated Text and Translation*. Ed. & tr. Patrick Olivelle 2000. Delhi: Motilal Banarsidass.

AV: *Athvarvavedasaṃhitā* (*Śaunaka recension*). *Atharva Veda Sanhita*, I*: Text*. Ed. Rudolf Roth & William Dwight Whitney 1856. Berlin: Ferd. Dümmler's Verlagsbuchhandlung.

Bṛhad-Āraṇyaka-Upaniṣad: *The Early Upaniṣads*. *Annotated Text and Translation*. Ed. & tr. Patrick Olivelle 1998. NY: OUP.

ESO: European Southern Observatory

ṚV: *Ṛgvedasaṃhitā. Die Hymnen des Ṛigveda*, I*: Maṇḍala I–VI*; II*: Maṇḍala VII–X.* Ed. Theodor Aufrecht 1877. *Nebst Beigaben.* 2nd ed. Bonn: Adolph Marcus.

REFERENCES

Anghelina, Catalin 2013. *On the Nature of the Vedic Gods*. (Sino-Platonic Papers 241) Philadelphia: University of Pennsylvania.

Arvidsson, Stefan 2006. *Indo-European Mythology as Ideology and Science.* Tr. Sonia Whichmann. Chicago: UCP.

Bergaigne, Abel 1883. *La Religion Védique. D'après les hymnes du Rig-Veda*, II. Paris: F. Vieweg, Librairie-Éditeur.

Dandekar, R.N. 1939. New Light on the Vedic God– सवितृ. *Annals of the Bhandarkar Oriental Research Institute* 20(3): 293–316.

45 As a matter of fact, Savitṛ is associated with the Nakṣatra called "Hand" (*hasta*) in the later Taittirīya-Saṃhitā (IV 4.10.b) and Brāhmaṇa. In the Brāhmaṇa (III 1.1.11a), he is asked to approach the Hand, driving in his chariot (*ā́yātu devā́ḥ savitópayātu, hiraṇyáyena suvṛ́tā ráthena / váhan hástaṁ subhágaṃ vidmanā́pasam, prayácchantaṃ pápuriṃ púṇyam áccha //*; according to later sources, the Hand corresponds to the constellation Corvus). However, Savitṛ is obviously not identified with this constellation in any way, as he would not need to approach his own hand in a chariot.

ESO/Beletsky, Yuri 2009. Zodiacal Light over La Silla. *ESO*, September. Available at <eso.org/public/images/zodiacal_beletsky_potw>, accessed 12 Aug. 2019.

ESO 2010. Night at Paranal Observatory. *ESO*, August. Available at <eso.org/public/images/paranal-7704>, accessed 12 Aug. 2019.

ESO/Wesson, R. 2014. Impression, Sunset. *ESO*, June. Available at <eso.org/public/images/potw1426a>, accessed 12 Aug. 2019.

Falk, Harry 1988. Savitṛ und die Sāvitrī. *Wiener Zeitschrift für die Kunde Südasiens* 32: 5–33.

Franceschini, Marco & Maurice Bloomfield 2007. An Updated Vedic Concordance. [Maurice Bloomfield's *A Vedic Concordance* enhanced with new material taken from seven Vedic texts]. Part I: a - na – Part II: pa - ha. Cambridge, MA: The Department of Sanskrit and Indian Studies, Harvard University.

Geldner, Karl F. repr. ²2003 [London, Geoffrey Cumberlege / Oxford University Press / Leipzig: Otto Harrasowitz, ¹1951 / IV: ¹1957]. *Der Rig-Veda aus dem Sanskrit ins Deutsche übersetzt und mit einem laufenden Kommentar versehen*, I: *Erster bis vierter Liederkreis*, II: *Fünfter bis achter Liederkreis*, III: *Neunter bis zehnter Liederkreis*, IV: *Nachträge und Berichtigungen zur Übersetzung.* [*Harvard Oriental Series* 63 = I–IV = *Harvard Oriental Series* ²33–36]. Cambridge, MA: HUP.

Güntert, Hermann 1923. *Der arische Weltkönig und Heiland: Bedeutungsgeschichtliche Untersuchungen zur indo-iranischen Religionsgeschichte und Altertumskunde*. Halle: Verlag von Max Niemeyer.

Heesterman, Johannes Cornelis 1994. Review of Minkowski 1991. *Indo-Iranian Journal* 37(3): 269–271.

Hillebrandt, Alfred 1902. *Vedische Mythologie*, III. Breslau: Wilhelm Koebner, Verlag von M. & H. Marcus.

Jamison, Stephanie W. & Joel P. Brereton (trs) 2014. *The Rigveda: The Earliest Religious Poetry of India*, I–III. Oxford: OUP.

Jamison, Stephanie & Michael Witzel 1992. *Vedic Hinduism*. Available at <people.fas.harvard.edu/%7Ewitzel/vedica.pdf>, accessed 1 May 2016.

Kelley, David H. & Eugene F. Milone 2011. *Exploring Ancient Skies.* 2nd edn. NY: Springer.

Latura, George 2012. Plato's Visible God: The Cosmic Soul Reflected in the Heavens. *Religions* 3: 880–886.

Latura, George 2018. The Zodiacal Light and its Use in Cultic Practice. In: N. Campion & C. Impey (eds), *Imagining Other Worlds: Explorations in Astronomy and Culture:* 193–202. Ceredigion: Sophia Centre Press.

Lommel, Herman 1956. Die aufopferungsvolle Gattin im alten Indien. *Paideuma* 6(3): 95–109.

Macdonell, Arthur Anthony, repr. ⁵2002 [Strassburg, K.J. Trübner[1],1897]. *Vedic Mythology*: *Grundriss der indo-arischen Philologie und Altertumskunde*, III. *Band*, *I. Heft A*. Delhi: Motilal Banarsidass.

Mayrhofer, Manfred 1992. *Etymologisches Wörterbuch des Altindoarischen*, I [*a–dh*]. Heidelberg: Carl Winter.

Mellinger, Axel 2009. A Color All-Sky Panorama Image of the Milky Way. *Publications of the Astronomical Society of the Pacific* 121: 1180–1187.

Merker, Björn 1988. Rig Veda Riddles in Nomad Perspective. *Mongolian Studies* 11: 35–41.

Michalski, Stanisław F. 1954. Zodiacal Light in the Ṛgveda. *The Journal of the Bihar Research Society* 40: 17–28.

Minkowski, Christopher 1991. *Priesthood in Ancient India: A Study of the Maitrāvaruṇa Priest*. Vienna: Sammlung de Nobili.

van Nooten, Barend A. & Gary B. Holland 1994. *Rig Veda: A Metrically Restored Text*. (Harvard Oriental Series 50) Cambridge, MA: HUP.

Oberlies, Thomas 1998. *Die Religion des Ṛgveda*, I: *Das religiöse System des Ṛgveda*. Wien: Sammlung de Nobili.

Oberlies, Thomas 2012. *Der Rigveda und seine Religion.* Berlin: Verlag der Weltreligionen.

Oldenberg, Hermann 1897. Savitar. *Zeitschrift der Deutschen Morgenländischen Gesellschaft* 51: 473–484.

Oldenberg, Hermann 1905. Noch einmal der vedische Savitar. *Zeitschrift der Deutschen Morgenländischen Gesellschaft* 59(2): 253–264.

Oldenberg, Hermann 1909. *Ṛgveda. Textkritische und exegetische Noten. Erstes bis sechstes Buch.* Berlin: Verlag von Wilhelm Hertz.

Oldenberg, Hermann 1912. *Ṛgveda. Textkritische und exegetische Noten. Siebentes bis zehntes Buch.* Berlin: Verlag von Wilhelm Hertz.

Oldenberg, Hermann 1917. *Die Religion des Veda.* Zweite Auflage. Stuttgart: J. G. Cotta'sche Buchhandlung Nachfolger.

Parpola, Asko 2000. The Religious Background of the Sāvitrī Legend. In: R. Tsuchida & A. Wezler (eds), *Harānandalaharī: Volume in Honour of Professor Minoru Hara on his Seventieth Birthday*: 193–216. Reinbek: Dr. Inge Wezler Verlag für Orientalistische Fachpublikationen.

Srivastava, V.C. 1963. The Original Nature and Significance of Savitr [sic!] in Rigvedic Religion. *Journal of the Andhra Historical Research Society* 39(1–2): 48–56.

Tafreshi, Babak 2015. Zodiacal Light, Milky Way, and Winter Hexagon. *The World At Night* (*TWAN*). Available at <twanight.org/newTWAN/photos.asp?ID=3005055>, accessed 23 Apr. 2019.

Werba, Chlodwig H. 1997. *Verba Indoarica. Die primären und sekundären Wurzeln der Sanskrit-Sprache*, I: *Radices Primariae.* Wien: Verlag der Österreichischen Akademie der Wissenschaften.

Witzel, Michael 1984. Sur le chemin du ciel. *Bulletin d'Études Indiennes* 2: 213–279.

Zotti, Georg & Alexander Wolf (eds) 2018. *Stellarium 0.18.3 User Guide.* Available at <github.com/Stellarium/stellarium/releases/download/v0.18.3/stellarium_user_guide-0.18.3-1.pdf>, accessed 8 Feb. 2019.

APPENDIX

In Witzel's illustration referred to by Falk, four "phases" of the Milky Way are displayed, one on top of the other (Figure 5 in this paper). The exact date of the observations is not specified. The Milky Way marked with "18h Altair" (6h pm; Altair is the name of a star in the Milky Way) corresponds roughly to the illustration of the Milky Way at sunset in December and January in Table 1. The Milky Way marked plainly with "Altair" can be seen at midnight; the Milky Way marked with "6h Altair" is visible before daybreak (this again roughly corresponds to midnight and sunrise in the same row of the table). It is likely this last Milky Way that Falk saw as a man with arms held up. The misreading might date back to Witzel himself.[46] The special marking of the northern horizon at two different times ("horizon à 30°N en déc. à 18h" / "horizon nord en juin") gives the impression that this is the only horizon. Of course, all four borders of the figure can be the boundaries of the (in reality nonrectangular) horizon.

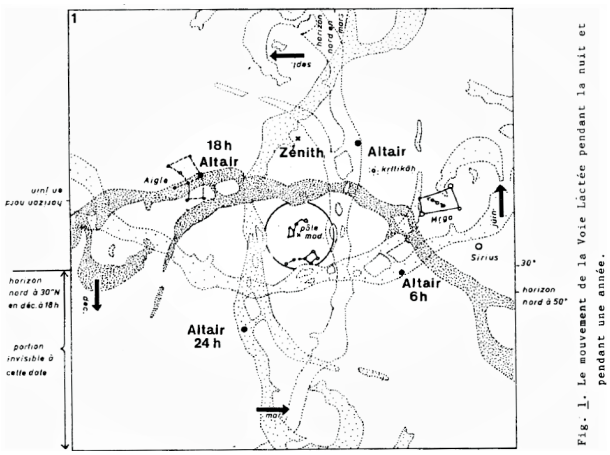


Figure 5 The movement of the Milky Way during the night and during the year.
"Fig. 1" in Witzel 1984: 269.

The illustrations in Table 1 below show more clearly what the nocturnal sky looked like at various times and locations. They were made with the help of the Planetarium software "Stellarium" (version 0.18.3).[47] According to the manual, "its use is recommended only for the year range -4000...+8000. Outside this range, it seems to be usable for a few more millennia without too great errors, but with degrading accuracy" (Zotti & Wolf 2018: 50). It is therefore accurate enough to show how the Vedic people saw the nocturnal sky with the naked eye some three millennia ago.

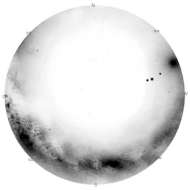
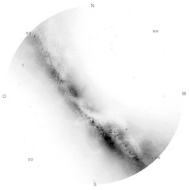
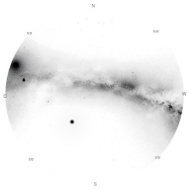
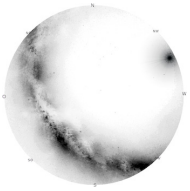
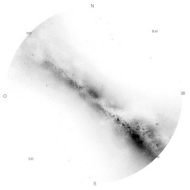
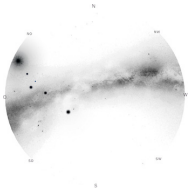
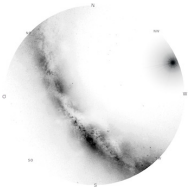
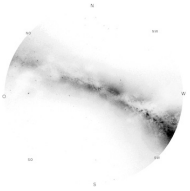
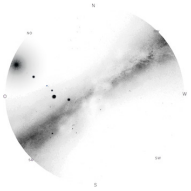
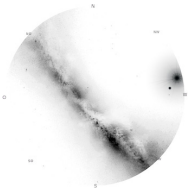
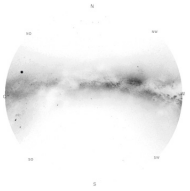
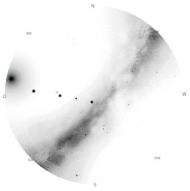
The illustrations are seen as if one were lying on the ground and looking to the zenith, the head being in the north and the feet pointing towards the south. The horizon – in this case, the earth – surrounds the observer at the border of the circle. On the left side, we expect the rising of the sun, which will set again on the right. The images are displayed in black and white and with inverted colouration. The dark line is the Milky Way. The sun is a dark spot sometimes partially visible on the horizon.

46 Witzel 1984: 218: "Nous verrons que Sarasvatī la Voie Lactée se trouve une fois au centre, une autre fois aux confins de la terre (à l'horizon): en ces points, la Voie Lactée semble toucher la terre pendant la nuit (*pour quelques heures, le cas échéant*)" (italics mine).

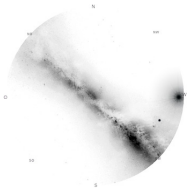
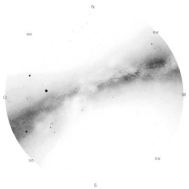
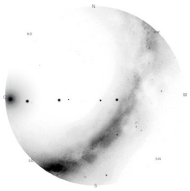
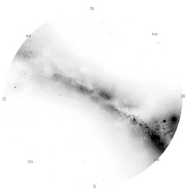
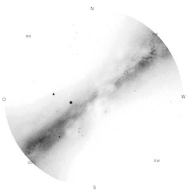
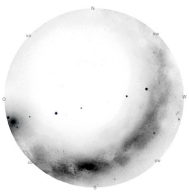
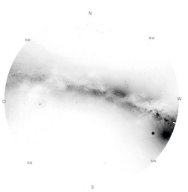
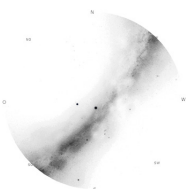
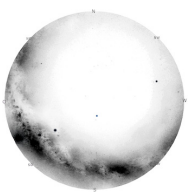
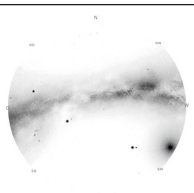
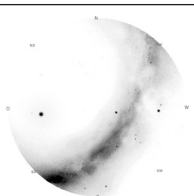
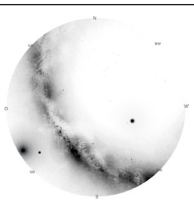
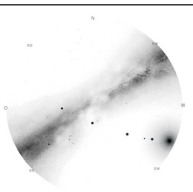
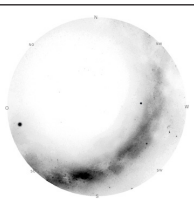
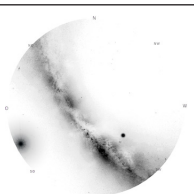
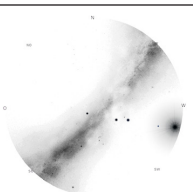
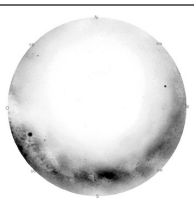
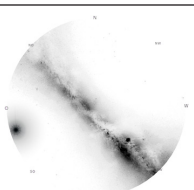
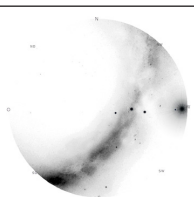
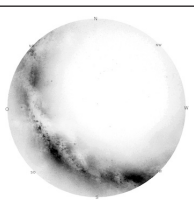
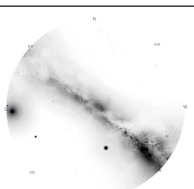
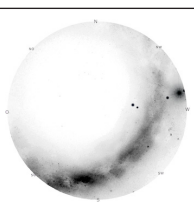
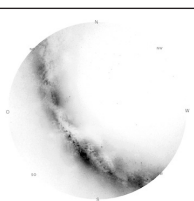
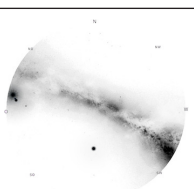
47 The image of the Milky Way itself was created by Axel Mellinger (2009).

In order to facilitate verifiability, modern cities have been chosen to represent the various areas through which Vedic culture passed in the course of time. The illustrations in Table 1 show the complex movements of the Milky Way in relation to the sun throughout a year in Kurukṣetra, 1000 BCE. The town Pilibangan (29.488802°N, 74.074802°E) has been chosen to represent the region Kurukṣetra. The Milky Way is shown at midnight and at the moments of sunrise and sunset. Although the Milky Way already disappears before the sun rises, I have chosen to depict the sky at this time in order to show where the sun rises and sets. The change in position between sunrise/sunset and the (dis)appearance of the Milky Way is negligible. The table starts with June, around the beginning of the monsoon in South Asia. The seasons do not match the months of the Gregorian calendar exactly; they have only been given for a rough orientation.

Table 1 The Milky Way seen from Kurukṣetra, 1000 BCE, always on the first day of each month, at sunset, midnight, and sunrise.

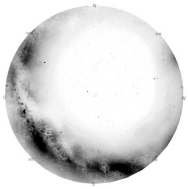
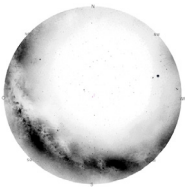
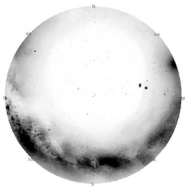
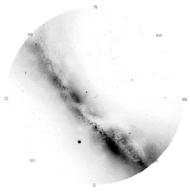
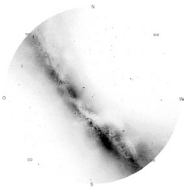
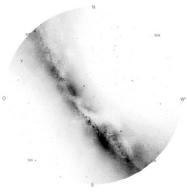
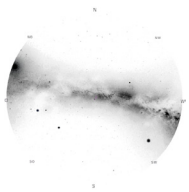
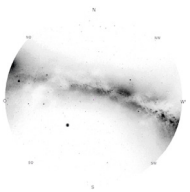
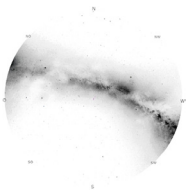
season	month	sunset	midnight	sunrise
	6[48]			
Monsoon	7			
	8			
	9			

48 Between the end of June and mid-July, the summer solstice takes place, the Vedic study is resumed, and the monsoon sets in the northwest of South Asia.

season	month	sunset	midnight	sunrise
Autumn	10			
	11			
Winter	12			
	1			
	2			
	3			
Summer	4			
	5			

The nine illustrations in Table 2 below show that the precession and the location of the observer do not have a great effect on the appearance of the night sky in this area over the course of a millennium. As can be seen, the position of the Milky Way remains almost the same, regardless if it was seen from Kabul or Benares, 1 June, 1500 or 500 BCE.

Table 2 The Milky Way seen at various times from various locations in South Asia, 1 June.

sunset (between 6:30 and 7 pm)			
	Kabul, 1500 BCE	Delhi, 1000 BCE	Benares, 500 BCE
midnight			
	Kabul, 1500 BCE	Delhi, 1000 BCE	Benares, 500 BCE
sunrise (*c*.5 pm)			
	Kabul, 1500 BCE	Delhi, 1000 BCE	Benares, 500 BCE