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NOTES & DÉBATS

*Les Lumières et l'astronomie indienne*

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## NOTES & DÉBATS

### LES LUMIÈRES ET L'ASTRONOMIE INDIENNE

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*La rédaction a reçu il y a quelque temps des réactions critiques à un article publié dans cette Revue il y a une dizaine d'années. Nous en publions ici une version synthétique, suivie d'une réponse de l'auteur aux critiques et d'une note de la rédaction.*

#### 1. REMARKS ON AN ARTICLE BY DHRUV RAINA

JACQUES WAGNER

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In 2003, the *Revue d'Histoire des Mathématiques* published an article by Dhruv Raina entitled: “Betwixt Jesuit and Enlightenment historiography: Jean-Sylvain Bailly’s History of Indian Astronomy” (tome 9, fascicule 2, pp. 253–306). According to the summary, “the paper traces the influence of the Jesuit historiography of India on the landscape of French Enlightenment historiography—and in particular on Bailly’s quaint antediluvian theory of the origins of Indian Astronomy.”

The Jesuits did have an influence on Bailly and other 18th century historians in that they undertook scientific field work: ethnography in the

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newly discovered countries, and even traditional astronomy or mathematics. Their accomplishments were not without ulterior motives, though, as they desired to give their doctrine a scientific appearance in order to encourage more new converts among the colonized populations, even to the point of compromise with the colonial powers—which is why they were chased out of Japan at gunpoint at the end of the 16th century. But this use of scientific work or authentic documents, which were then transmitted by the Jesuits, did not imply a connivance with the aims of the Jesuits. It therefore comes as a surprise to read in Dhruv Raina's article on page 292 that: "Unwittingly, though it may appear, Laplace validated Bailly's chronology and then provided legitimacy to the Christian / Biblical chronology." Laplace and Bailly never shared the political aims of the Jesuits, and in this particular case Laplace confirmed 3102 BC as the date of the beginning of the Indian Kali-Yuga, using the mean annual motion of Saturn, and consequently confirmed the existence of an advanced civilization in and around India a long time before the Bible's Chosen People and monotheism entered stage. This was devastating for the Jesuits' attempts to justify Biblical chronology by way of scientific facts.

Furthermore, Dhruv Raina writes on page 254: "Yet his *Traité de l'Astronomie Indienne et Orientale* [Bailly 1787] and his *cause célèbre*, the hypothesis concerning the antediluvian origins of Indian astronomy were controversial and animated subsequent scholarship." The problem is that this famous hypothesis is *not* found in Bailly's *Traité* of 1787, though it is stated in Bailly's Third Book of *Histoire de l'Astronomie Ancienne* of 1775. It is presented again in the *Lettres à Voltaire* [1777] and [1779], but does not occur again in any of Bailly's later writings. Dhruv Raina reiterates his allusion on page 264. Reviewing the sixth chapter of the treatise, he writes: "In order to establish his antediluvian hypothesis, Bailly first seeks to establish that the Indians had borrowed nothing from other people in comparative perspective." Indeed, throughout the rest of his 1787 *Traité*, Bailly refutes any borrowing from other peoples and deduces that Indian astronomy is grounded on authentic Indian observations made at the beginning of the Kali-Yuga. The hypothesis of the Indians being simple repositories and not inventors of an antediluvian scientific astronomy is abandoned. So it seems that Dhruv Raina read Bailly's *Traité de l'Astronomie Indienne et Orientale* only superficially.

This impression is strengthened by the comparison Dhruv Raina sketches with Montucla. It is quite natural to compare Bailly's *Histoire* (1775) with Montucla's works and Dhruv Raina's preference for Montucla

is probably well founded. However, it is incongruous to compare Montucla's works with Bailly's *Traité* (1787), which is essentially a treatise of Astronomy bringing into play high-level mathematical techniques and having the ambition of verifying the principles of Celestial Mechanics from the Indian astronomical tables and reciprocally inferring a dating for these tables from Celestial Mechanics. In his *Traité*, Bailly scarcely mentions Laplace, but constantly refers to Lagrange, with whom he had worked on Jupiter's satellites. "J'offre avec plaisirs ces résultats à M. de la Grange,... & aujourd'hui il apprendra avec satisfaction qu'il y a eu une ancienne Astronomie dans l'Inde qui peut servir de preuve & de confirmation à cette savante théorie." [Bailly 1787, p. 168].<sup>1</sup>

Last but not least, on page 261, Dhruv Raina tries to make us believe that the sources of Bailly's 1775 *Histoire* and of his 1787 *Traité* are not substantially different. Yet an essential difference lies in the influence of Guillaume Le Gentil and the Tables of Tirvalore on French indology. In the *Histoire*, Bailly just skims over Le Gentil's works; whereas these, along with the Tables of Tirvalore, are the foundations of the *Traité de l'Astronomie Indienne et Orientale*. It is obvious that Bailly completely changed his mind about the Indians and their astronomy under the influence of Le Gentil.

Moreover, on page 265, Dhruv Raina asserts that, in 1760, Le Gentil met the Jesuit Cœurdoux in Pondicherry and was manipulated by him. But all French sources attest that, in 1760, the English Navy blockaded Le Gentil on Mauritius Island, so that he could not have reached Pondicherry until the end of the Seven Years' War against England, in 1768. Anyway, neither Le Gentil nor Bailly ever felt like following in the Jesuits' footsteps. The Jesuits' influence in France culminated in 1685 with the repeal of the Edit de Nantes, but it waned progressively during the 18th century until Choiseul eventually expelled them from France in November 1764. The Jesuits, demonized by all English sources, could only return to France in 1815, thanks to England's victory in Waterloo.

Nevertheless Dhruv Raina is right in asserting that, when Bailly started to write his *Histoire de l'Astronomie*, he shared most of the prejudices of his era and refused the idea of any kind of creative genius in non-European peoples. Hence the theory of antediluvian astronomy, which began as a linguistic theory—and not as a racist theory, as Dhruv Raina would have it—deprived the Asian peoples (with the notable exception of the Persians) of any credit due for contribution to the conception of astronomy:

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<sup>1</sup> I have the pleasure to present these results to Mr. de la Grange... and today he will be happy to discover that there has been an antique astronomy in India that proves and bears out his own learned theory.