

Seminar SAW : Mathematical practices in the context of the Astral Sciences

Abstract :

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Where are the leap days in the Mesoamerican calendar?

The Mesoamerican cultures developed three different calendars: a year calendar with 365 days, which is divided in 18 periods of 20 days each and one period of five days, a ritual calendar with 260 days divided into 13 periods of 20 days each and the long count calendar, better known as the Maya Calendar which period lasts for 1,872,000 days.

The year calendar and the ritual calendar start on the same name day¹ and after 260 days they desynchronize. They would start again at the same name day after 52 years², but after 52 years the year calendar ends 13 days before the astronomical calendar.

There are no remarks on the prehispanic documents how the Mesoamericans corrected this. In the colonial documents Fray Bernardino de Sahagún mentioned that they did this correction by adding one day every four years. With this correction the year calendar and the ritual calendar would be desynchronized.

On basis of the arithmetical relations between these two calendars and some cultural rituals we construct another proposal how Mesoamericans synchronized the year calendar with the astronomical one.

1 For example (1, crocodile, first period).

2 Or 73 ritual-years