began systematically observing and recording astronomical (and meteorological) phenomena. Their purpose was to improve the efficiency of their prognostications, but the impact of their efforts on the history of astronomy was to be incalculable. For seven centuries the recording went on; and just as the Enuma was the expression of ominous experiences that had been repeated so often that they had come to be recognized as regularities in the cosmic order, so cycles - regularities - in the behaviour of the Sun, Moon, and planets were gradually identified and confirmed.

The need of astrologers to have tables ('ephemerides') of the future positions of the Sun, Moon, and planets was, until the seventeenth century, a driving force behind the study of the movements of the heavenly bodies. Equipped with ephemerides, the astrologer could ply his trade in fair weather and foul. The Babylonian scribes learned to do this, by using their sophisticated numerical system to take full advantage of the cycles revealed by their observational records.

For example, the speed of the Sun in its year-long journey among the background stars constantly varies, and the Babylonian techniques for coping with this illustrate the ingenuity of their methods. For half the year the Sun's speed gradually increases, until it reaches a maximum; thereafter, for the next half-year, it slows down until it reaches a minimum.

The Babylonians devised two ways of approximating to this. The first involved supposing that the Sun moved with a constant speed for half the year, and for a different constant speed for the other half of the year. The second, and more sophisticated, involved supposing that the Sun increased its speed uniformly for half the year, and then decreased it uniformly for the remaining half of the year. Clearly neither could have been intended as other than a highly artificial approximation to reality; but the resultant calculations were straightforward because of their efficient numerical notation, and the results were good enough.

Similar techniques were used to give control of the movements of the Moon and of the five planets, and this allowed the compilation of tables of extraordinary complexity. Some of these have come down to us, in the form of elaborate tablets with columns of numbers, whose underlying constructions historians patiently labour to unravel.

Whether the scribes had in mind any model of the universe, we do not know. What they handed on to astronomers who wrote in Greek were arithmetical

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**Sun's speed changes to 30°11'59" per month**

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Month

12th 1st 2nd 3rd 4th 5th 6th 7th 8th 9th 10th 11th 12th