

Chapter 9

The History of Time

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Abstract Time and timekeeping are subjects of long-standing discussions in the fields of science and philosophy. Timekeeping requires some regularly repeatable natural phenomenon, e.g., a year or a day along with established conventions regarding (1) the interval between repetitions, (2) when the series of repetitions is recognized to begin, (3) the names for successive repetitions and their subdivisions, and (4) the means by which this information can be distributed. Beginning with early man, repetitive astronomical phenomena provided obvious answers to these concerns, the regular appearance of the Sun and Moon being the most obvious. Evolving civilization made it necessary to develop increasingly sophisticated concepts regarding time as well as increasingly sophisticated measurements of the passage of time. Particularly notable steps in the evolution of concepts of time involve the thoughts of Aristotle, Newton, and our understanding of the principles of special and general relativity. Particularly notable events in timekeeping range from sundials, water clocks, mechanical clocks, to atomic clocks, all of these devices being related to increasingly sophisticated astronomical observations.

Keywords Time • Timekeeping requirements

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