

Tables of the mean obliquity at different epochs.

Year.	Obliquity.	Year.	Obliquity.
	° / "		° / "
1600	23 29 28.69	- 2500	23 58 44.00
1650	29 5.31	- 2000	55 38.99
1700	28 41.91	- 1500	52 23.10
1750	28 18.51	- 1000	48 57.70
1800	27 55.10	- 500	45 24.14
1850	27 31.68	0	41 43.78
1900	27 8.26	+ 500	37 57.97
1950	26 44.84	1000	34 8.07
2000	26 21.41	1500	30 15.43
2050	25 57.98	2000	26 21.41
2100	23 25 34.56	2500	23 22 27.37

Relative positions of the equator and ecliptic at different dates.

102. The motions expressed in the preceding tables are, for the most part, purely instantaneous ones, referred to the planes of the ecliptic and equator of each separate epoch. For the reduction of the places of the fixed stars from one epoch to another, it is necessary to know the relative position of the planes of the equator or ecliptic at the two epochs. We shall therefore derive the fundamental quantities which express the position of the equator and the ecliptic at any one epoch relatively to their positions at a fundamental epoch taken at pleasure. The latter we shall call zero-position. Then, the zero equator and ecliptic are those of the fundamental epoch; the equator and ecliptic simply those of any other varying epoch. So far as convenient, and as conducive to ease in comparing our results with former ones, we shall use the notation of BESSEL.

To derive the equations for the motions, let us consider the following four points of the celestial sphere:

- E_0 , the pole of the zero ecliptic.
- E , the pole of the actual ecliptic.
- P_0 , the pole of the zero equator.
- P , the pole of the actual equator.