The use of
"The Seleucid Code"
reveals the fact that
for the
passed 2200 years the
value of Delta T with
great certainty will
converge to zero...

THE ENIGMATIC DELTA T

The solar and lunar eclipses tested by the means of my “Seleucid code” are indicating unequivocally that the concept of the Delta T is in big trouble, or more exactly there is something very wrong in connection with the Delta T values calculated for our distant past.
What really the Delta T is?
In brief:
The delta T is the Earth’s rotational clock error, that is the time difference obtained by subtracting Universal Time from Terrestrial Time

Delta T = TT – UT

where TT is the Terrestrial Time and
UT is the Universal Time

It is a well-known fact that in the time period of the telescopic observations (since 1600 CE) there is no serious rotational clock error in the rotation of our Earth.

http://eclipse.gsfc.nasa.gov/SEhelp/deltat2004.html

Observed values (in seconds) for the period 1620 to 1700

Year	Value	Year	Value	Year	Value	Year	Value	Year	Value
1620.0	+124	1637.0	+67	1654.0	+44	1671.0	+25	1688.0	+11
1621.0	+119	1638.0	+65	1655.0	+43	1672.0	+24	1689.0	+10
1622.0	+115	1639.0	+63	1656.0	+42	1673.0	+23	1690.0	+10
1623.0	+110	1640.0	+62	1657.0	+41	1674.0	+22	1691.0	+10
1624.0	+106	1641.0	+60	1658.0	+40	1675.0	+21	1692.0	+ 9
1625.0	+102	1642.0	+58	1659.0	+38	1676.0	+20	1693.0	+ 9
1626.0	+98	1643.0	+57	1660.0	+37	1677.0	+19	1694.0	+ 9
1627.0	+95	1644.0	+55	1661.0	+36	1678.0	+18	1695.0	+ 9
1628.0	+91	1645.0	+54	1662.0	+35	1679.0	+17	1696.0	+ 9
1629.0	+88	1646.0	+53	1663.0	+34	1680.0	+16	1697.0	+ 9
1630.0	+85	1647.0	+51	1664.0	+33	1681.0	+15	1698.0	+ 9
1631.0	+82	1648.0	+50	1665.0	+32	1682.0	+14	1699.0	+ 9
1632.0	+79	1649.0	+49	1666.0	+31	1683.0	+14	1700.0	+ 9
1633.0	+77	1650.0	+48	1667.0	+30	1684.0	+13		
1634.0	+74	1651.0	+47	1668.0	+28	1685.0	+12		
1635.0	+72	1652.0	+46	1669.0	+27	1686.0	+12		
1636.0	+70	1653.0	+45	1670.0	+26	1687.0	+11		

Observed values (in seconds) for the period 1701 to 1800

Year	Value	Year	Value	Year	Value	Year	Value	Year	Value
1701.0	+9	1721.0	+11	1741.0	+12	1761.0	+15	1781.0	+17
1702.0	+9	1722.0	+11	1742.0	+12	1762.0	+15	1782.0	+17
1703.0	+9	1723.0	+11	1743.0	+12	1763.0	+15	1783.0	+17
1704.0	+9	1724.0	+11	1744.0	+13	1764.0	+15	1784.0	+17
1705.0	+9	1725.0	+11	1745.0	+13	1765.0	+16	1785.0	+17
1706.0	+9	1726.0	+11	1746.0	+13	1766.0	+16	1786.0	+17
1707.0	+9	1727.0	+11	1747.0	+13	1767.0	+16	1787.0	+17
1708.0	+10	1728.0	+11	1748.0	+13	1768.0	+16	1788.0	+17
1709.0	+10	1729.0	+11	1749.0	+13	1769.0	+16	1789.0	+17
1710.0	+10	1730.0	+11	1750.0	+13	1770.0	+16	1790.0	+17
1711.0	+10	1731.0	+11	1751.0	+14	1771.0	+16	1791.0	+17
1712.0	+10	1732.0	+11	1752.0	+14	1772.0	+16	1792.0	+16
1713.0	+10	1733.0	+11	1753.0	+14	1773.0	+16	1793.0	+16
1714.0	+10	1734.0	+12	1754.0	+14	1774.0	+16	1794.0	+16
1715.0	+10	1735.0	+12	1755.0	+14	1775.0	+17	1795.0	+16
1716.0	+10	1736.0	+12	1756.0	+14	1776.0	+17	1796.0	+15
1717.0	+11	1737.0	+12	1757.0	+14	1777.0	+17	1797.0	+15
1718.0	+11	1738.0	+12	1758.0	+15	1778.0	+17	1798.0	+14
1719.0	+11	1739.0	+12	1759.0	+15	1779.0	+17	1799.0	+14
1720.0	+11	1740.0	+12	1760.0	+15	1780.0	+17	1800.0	+13.7

Observed values (in seconds) for the period 1801 to 1900

Year	Value	Year	Value	Year	Value	Year	Value	Year	Value
1801.0	+13.4	1821.0	+11.7	1841.0	+5.8	1861.0	+7.82	1881.0	–5.42
1802.0	+13.1	1822.0	+11.4	1842.0	+5.9	1862.0	+7.54	1882.0	–5.20
1803.0	+12.9	1823.0	+11.1	1843.0	+6.1	1863.0	+6.97	1883.0	–5.46
1804.0	+12.7	1824.0	+10.6	1844.0	+6.2	1864.0	+6.40	1884.0	–5.46
1805.0	+12.6	1825.0	+10.2	1845.0	+6.3	1865.0	+6.02	1885.0	–5.79
1806.0	+12.5	1826.0	+9.6	1846.0	+6.5	1866.0	+5.41	1886.0	–5.63
1807.0	+12.5	1827.0	+9.1	1847.0	+6.6	1867.0	+4.10	1887.0	–5.64
1808.0	+12.5	1828.0	+8.6	1848.0	+6.8	1868.0	+2.92	1888.0	–5.80
1809.0	+12.5	1829.0	+8.0	1849.0	+6.9	1869.0	+1.82	1889.0	–5.66
1810.0	+12.5	1830.0	+7.5	1850.0	+7.1	1870.0	+1.61	1890.0	–5.87
1811.0	+12.5	1831.0	+7.0	1851.0	+7.2	1871.0	+0.10	1891.0	–6.01
1812.0	+12.5	1832.0	+6.6	1852.0	+7.3	1872.0	–1.02	1892.0	–6.19
1813.0	+12.5	1833.0	+6.3	1853.0	+7.4	1873.0	–1.28	1893.0	–6.64
1814.0	+12.5	1834.0	+6.0	1854.0	+7.5	1874.0	–2.69	1894.0	–6.44

Year	Value	Year	Value	Year	Value	Year	Value	Year	Value
1815.0	+12.5	1835.0	+5.8	1855.0	+7.6	1875.0	–3.24	1895.0	–6.47
1816.0	+12.5	1836.0	+5.7	1856.0	+7.7	1876.0	–3.64	1896.0	–6.09
1817.0	+12.4	1837.0	+5.6	1857.0	+7.7	1877.0	–4.54	1897.0	–5.76
1818.0	+12.3	1838.0	+5.6	1858.0	+7.8	1878.0	–4.71	1898.0	–4.66
1819.0	+12.2	1839.0	+5.6	1859.0	+7.8	1879.0	–5.11	1899.0	–3.74
1820.0	+12.0	1840.0	+5.7	1860.0	+7.88	1880.0	–5.40	1900.0	–2.72

Observed values (in seconds) for the period 1901 to 2000

Year	Value	Year	Value	Year	Value	Year	Value	Year	Value
1901.0	– 1.54	1921.0	+22.25	1941.0	+24.83	1961.0	+33.59	1981.0	+51.38
1902.0	– 0.02	1922.0	+22.41	1942.0	+25.30	1962.0	+34.00	1982.0	+52.17
1903.0	+ 1.24	1923.0	+23.03	1943.0	+25.70	1963.0	+34.47	1983.0	+52.96
1904.0	+ 2.64	1924.0	+23.49	1944.0	+26.24	1964.0	+35.03	1984.0	+53.79
1905.0	+ 3.86	1925.0	+23.62	1945.0	+26.77	1965.0	+35.73	1985.0	+54.34
1906.0	+ 5.37	1926.0	+23.86	1946.0	+27.28	1966.0	+36.54	1986.0	+54.87
1907.0	+ 6.14	1927.0	+24.49	1947.0	+27.78	1967.0	+37.43	1987.0	+55.32
1908.0	+ 7.75	1928.0	+24.34	1948.0	+28.25	1968.0	+38.29	1988.0	+55.82
1909.0	+ 9.13	1929.0	+24.08	1949.0	+28.71	1969.0	+39.20	1989.0	+56.30
1910.0	+10.46	1930.0	+24.02	1950.0	+29.15	1970.0	+40.18	1990.0	+56.86
1911.0	+11.53	1931.0	+24.00	1951.0	+29.57	1971.0	+41.17	1991.0	+57.57
1912.0	+13.36	1932.0	+23.87	1952.0	+29.97	1972.0	+42.23	1992.0	+58.31
1913.0	+14.65	1933.0	+23.95	1953.0	+30.36	1973.0	+43.37	1993.0	+59.12
1914.0	+16.01	1934.0	+23.86	1954.0	+30.72	1974.0	+44.49	1994.0	+59.98
1915.0	+17.20	1935.0	+23.93	1955.0	+31.07	1975.0	+45.48	1995.0	+60.78
1916.0	+18.24	1936.0	+23.73	1956.0	+31.35	1976.0	+46.46	1996.0	+61.63
1917.0	+19.06	1937.0	+23.92	1957.0	+31.68	1977.0	+47.52	1997.0	+62.29
1918.0	+20.25	1938.0	+23.96	1958.0	+32.18	1978.0	+48.53	1998.0	+62.97
1919.0	+20.95	1939.0	+24.02	1959.0	+32.68	1979.0	+49.59	1999.0	+63.47
1920.0	+21.16	1940.0	+24.33	1960.0	+33.15	1980.0	+50.54	2000.0	+63.83

http://web.archive.org/web/20050308031114/www.phys.uu.nl/~vgent/astro/deltatime.htm

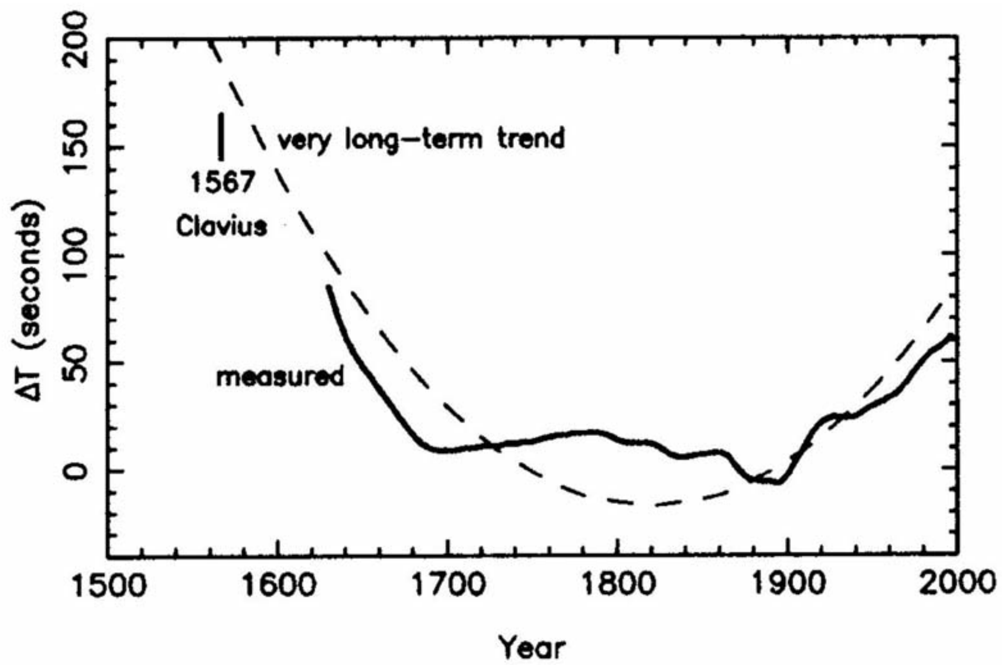


FIG. 1. The measured values of ΔT derived from telescopic observations after A.D. 1600. The possible range of values of ΔT from Clavius's observations of the solar eclipse in Rome is shown at 1567. The very long-term trend is part of the parabola fitted to the data in Figures 2 and 3.

The big „error" presents itself only for the time interval pre-dating the measuring period, and the attempt to determine the value of this „error" was based on the historical solar and lunar eclipses.

Values of delta T before AD 1600 pre-date the telescope and are based on historic records of naked eye observations of eclipses and occultations. A number of researchers have made significant contributions in this area. In particular, Morrison and Stephenson (2004) have fit hundreds of records with simple polynomials to achieve a best fit for describing the value of "Delta T" from 700 BCE to 1600 CE. An abbreviated table of their results follows:

Year	ΔT (sec)	Longitude Shift
–500	17 190 = 04h 47m	71.6°
0	10 580 = 02h 56m	44.1°
500	5 710 = 01h 35m	23.8°
1000	1 570 = 00h 26m	6.5°
1500	200 = 00h 03m	0.8°

or

Past values of ΔT can be deduced from the historical records. In particular, hundreds of eclipse observations (both solar and lunar) were recorded in early European, Middle Eastern and Chinese annals, manuscripts, and canons. In spite of their relatively low precision, these data represent the only evidence for the value of ΔT prior to 1600 CE. In the centuries following the introduction of the telescope (circa 1609 CE), thousands of high quality observations have been made of lunar occultations of stars. The number and accuracy of these timings increase from the seventeenth through the twentieth century, affording valuable data in the determination of ΔT. A detailed analysis of these measurements fitted with cubic splines for ΔT from -500 to +1950 is presented in Table 1 and includes the standard error for each value (Morrison and Stephenson, 2004).

Table 1 - Values of ΔT Derived from Historical Records

Year	ΔT (seconds)	Standard Error (seconds)
–500	17190	430
–400	15530	390
–300	14080	360
–200	12790	330
–100	11640	290
0	10580	260
100	9600	240
200	8640	210
300	7680	180
400	6700	160
500	5710	140
600	4740	120
700	3810	100
800	2960	80
900	2200	70
1000	1570	55
1100	1090	40
1200	740	30
1300	490	20
1400	320	20
1500	200	20
1600	120	20
1700	9	5
1750	13	2
1800	14	1
1850	7	<1
1900	–3	<1
1950	29	<0.1

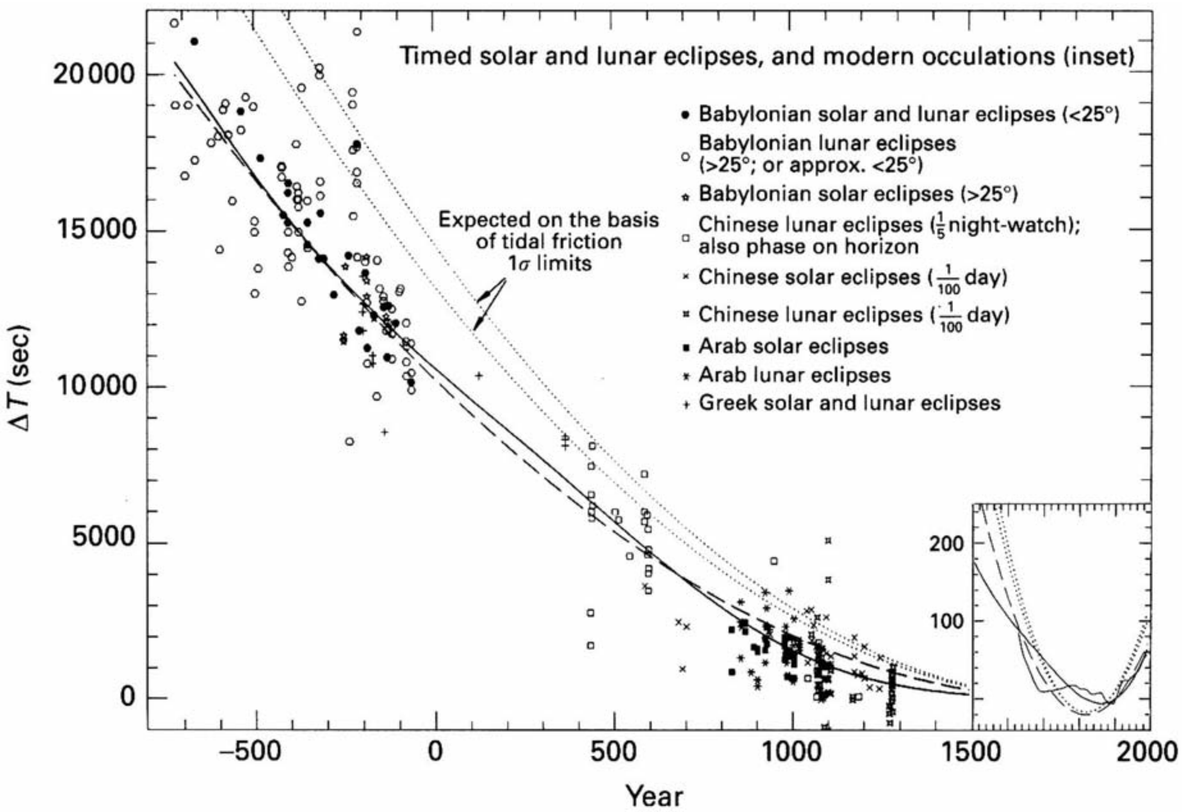
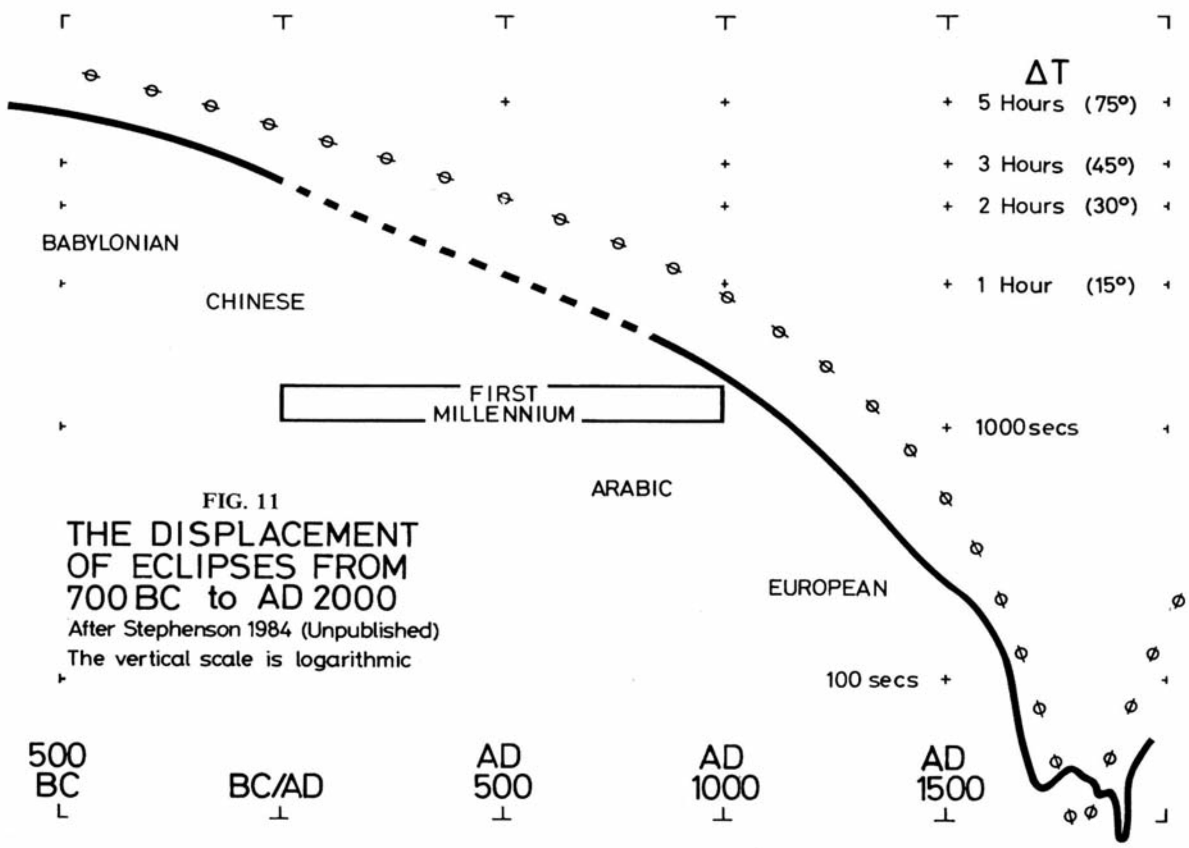


Fig. 14.2 ΔT values obtained from timed solar and lunar eclipses. Also shown (inset) is the ΔT curve obtained from modern occultations. (Courtesy: Dr L.V. Morrison.)



My firm opinion is that the drastical increase in the value of the Delta-T for the earlier period is based simply on misunderstandings. More exactly it is based on the fact that the astronomical retro-calculations made by humanists of the 15-16th centuries were mistakenly considered as contemporary „observations" of the recorded past. In the followings the scientists of the 20th century had taken these data as real observations, created their different equations, and by the means of the equations they retro-calculated the value of the Delta-T, shuffling accordingly the visible path of the solar eclipses on the surface of our globe.

"Semi-Empirical Analytical Relations for Delta T before the Telescopic Era"

During the past decades several semi-empirical analytical relations have been suggested in the literature as an aid for predicting past and future values for Delta T. When the tidal acceleration parameter is assumed to be constant in time, this results in a parabolic relation for Delta T as function of time (*u*), or:

$$\text{Delta T} = a + b * u + c * u^2$$

where *a*, *b* and *c* are constants that can be obtained from historical observations of solar and lunar eclipse timings and other data. The origin of *u* is often chosen in such a way that the linear term vanishes ($b = 0$).

IAU (1952)

In September 1952, the eighth General Assembly of the International Astronomical Union in Rome adopted the following formula:

$$\text{Delta T (sec)} = 24.349 + 72.318 * u + 29.950 * u^2 + \text{small fluctuations}$$

with $u = (\text{year} - 1900)/100$, or the time measured in centuries since 1900.
This formula was based on a study of the post-1650 observations of the Sun, the Moon and the planets by Spencer Jones (1939).
This single-parabolic relation (the influence of the "small fluctuations" was assumed to be negligible in the historical past) was used by Meeus in his *Astronomical Formulæ for Calculators* (1979, 1982) and in the lunar and solar eclipse tables of Mucke & Meeus (198?) and Meeus & Mucke (198?). It is also adopted in the PC program SunTracker Pro (Zephyr Services, 19??).

Astronomical Ephemeris (1960)

In 1960, a slightly modified version of the above relation was adopted in the *Astronomical Ephemeris*:

$$\text{Delta T (sec)} = 24.349 + 72.3165 * u + 29.949 * u^2 + \text{small fluctuations}$$

with $u = (\text{year} - 1900)/100$, or the time measured in centuries since 1900.

Tuckerman (1962, 1964) & Goldstine (1973)

The tables of Tuckerman (1962, 1964) list the positions of the Sun, the Moon and the planets at 5- and 10-day intervals from 601 B.C. to A.D. 1649. The listed positions are for 19h 00m (mean) local time at Babylon/Baghdad (*i.e.* near sunset) or 16h 00m GMT. From the difference in the adopted solar theory (Leverrier, 1857) with that of Newcomb (1895), Stephenson & Houlden (1981) and Houlden & Stephenson (1986) derived the following Delta T relation that is implicitly used in the Tuckerman tables:

$$\text{Delta T (sec)} = 4.87 + 35.06 * u + 36.79 * u^2$$

with u = (year – 1900)/100, or the time measured in centuries since 1900.

Morrison & Stephenson (1982)

Single-parabolic fit by L.V. Morrison & F.R. Stephenson.

$$\text{Delta T (sec)} = -15 + 32.5 * u^2$$

with u = (year – 1810)/100, or the time measured in centuries since 1810.
This relation was adopted in Bretagnon & Simon's *Planetary Programs and Tables from –4000 to +2800* (1986) and in the PC planetarium program RedShift (Maris Multimedia, 1994-2000).

Stephenson & Morrison (1984)

Double-parabolic fit by F.R. Stephenson & L.V. Morrison.

$$\text{Delta T (sec)} = 1360 + 320 * u + 44.3 * u^2 \quad (-391 < \text{year} < +948)$$

and

$$\text{Delta T (sec)} = 25.5 * u^2 \qquad (+948 < \text{year} < +1600)$$

with u = (year – 1800)/100, or the time measured in centuries since 1800.

Stephenson & Houlden (1986)

Double-parabolic fit by F.R. Stephenson & M.A. Houlden,

$$\text{Delta T (sec)} = 1830 - 405 * t + 46.5 * t^2 \quad (\text{year} < +948)$$

with t = (year – 948)/100, or the time measured in centuries since A.D. 948, and

$$\text{Delta T (sec)} = 22.5 * u^2 \qquad (+948 < \text{year} < +1600)$$

with u = (year – 1850)/100, or the time measured in centuries since 1850.
This relation is used in the PC planetarium program Guide 7 (Project Pluto, 1999).

Espenak (1987, 1989)

The following single-parabolic relation closely approximates the Delta T values given by Fred Espenak in his *Fifty Year Canon of Solar Eclipses 1986 – 2035* (1987) and in his *Fifty Year Canon of Lunar Eclipses 1986 – 2035* (1989).

$$\text{Delta T (sec)} = 65.0 + 76.15 * u + 41.6 * u^2$$

with u = (year – 2000)/100, or the time measured in centuries since 2000.
This relation should not be used before around 1950 or after around 2100.

Borkowski (1988)

The following single-parabolic fit was obtained by K.M. Borkowski from an analysis of 31 solar eclipse records from 2137 B.C. to A.D. 1715:

Delta T (sec) = 40 + 35.0 * u^2

with u = (year – 1625)/100, or the time measured in centuries since 1625.

The solar eclipse records were compared with the ELP 2000-85 lunar theory of Chapront-Touzé & Chapront (1988) which adopts a tidal acceleration parameter of –23.8946 arcsec/cy/cy.

Note that Borkowski's Delta T relation is strongly biased by the inclusion of speculative Delta T values inferred from two very early but highly doubtful solar eclipse records: the so-called Ugarit eclipse (dated to 3 May 1375 B.C. by Borkowski) and the legendary Chinese eclipse of Xi-Ho (22 October 2137 B.C.) mentioned in the *Shu Jing*.

Chapront-Touzé & Chapront (1991)

The following double-parabolic fit was adopted by Michelle Chapront-Touzé & Jean Chapront in the shortened version of the ELP 2000-85 lunar theory in their *Lunar Tables and Programs from 4000 B.C. to A.D. 8000* (1991):

Delta T (sec) = 2177 + 495 * u + 42.4 * u^2 (–391 < year < +948)

and

Delta T (sec) = 102 + 100 * u + 23.6 * u^2 (+948 < year < +1600)

with u = (year – 2000)/100, or the time measured in centuries since 2000.

The relations are based on those of Stephenson & Morrison (1984), but slightly modified to make them compatible with the tidal acceleration parameter of –23.8946 arcsec/cy/cy adopted in the ELP 2000-85 lunar theory.

Chapront, Chapront-Touzé & Francou (1997)

Six years later, Jean Chapront, Michelle Chapront-Touzé & G. Francou published an improved set of orbital constants for the ELP 2000-85 lunar theory in which they adopted a revised lunar acceleration parameter of –25.7376 arcsec/cy/cy to obtain a close fit the JPL DE 403 theory of the planets.

Delta T (sec) = 2177 + 497 * u + 44.1 * u^2 (–391 < year < +948)

and

Delta T (sec) = 102 + 102 * u + 25.3 * u^2 (+948 < year < +1600)

with u = (year – 2000)/100, or the time measured in centuries since 2000.

This relation is also recommended by Jean Meeus in the second edition of his *Astronomical Algorithms* (1998), but in order to avoid a discontinuity of about 37 seconds with the observed values around 2000, he suggests adding the linear term:

+0.37 * (year – 2100) (+2000 < year < +2100)

JPL Horizons

The JPL Solar System Dynamics Group of the NASA Jet Propulsion Laboratory (California Institute of Technology) supports an interactive website JPL Horizons for calculating high-precision positions of the solar system bodies from the most recent and accurate algorithms. For dates before 1620, the JPL Horizons website uses the following Delta T relations:

Delta T (sec) = 31.0 * t^2 (–2999 < year < +948)

with t = (year – 1820)/100, or the time measured in centuries since 1820, and

Delta T (sec) = 50.6 + 67.5 * u +22.5 * u^2 (+948 < year < +1620)

with u = (year – 2000)/100, or the time measured in centuries since 2000. The source of the pre-948 relation is unclear, the post-948 relation was taken from Stephenson & Houlden (1986). Note that their relations imply a 526.6-second jump in Delta T around A.D. 948."

http://web.archive.org/web/20050308031114/www.phys.uu.nl/~vgent/astro/deltatime.htm

And relying on these created charts (on the „scientific background") they „identified" further historical solar and lunar eclipses !

Our scientists were not aware of the fact that pope Innocent III had inserted 190 additional (fictive) years into the old-style calendar of his days and as a result of his action the order of the historical solar eclipses became fundamentally disturbed. Consequently we can now only confirm that all the solar or lunar eclipses which occurred before the 12th century of our present time counting are not at their original proper place on the astronomical time-axis.

To close all the disputs about the proper date of Christ's birth, in AD 1016 (that is in 1206 CE) pope Innocent III had reformed the old-style Christian time counting and had introduced the new-style Christian calendar which is in general use today and at the same time it is the astronomical time counting (CE).

These two different ways of time counting existing in parallel from the reign of Innocent III had disturbed the „clear sight" of the historians, and later they went on to fill up the extra 190 years (arising from pure nothingness) with „invented historical events and persons".

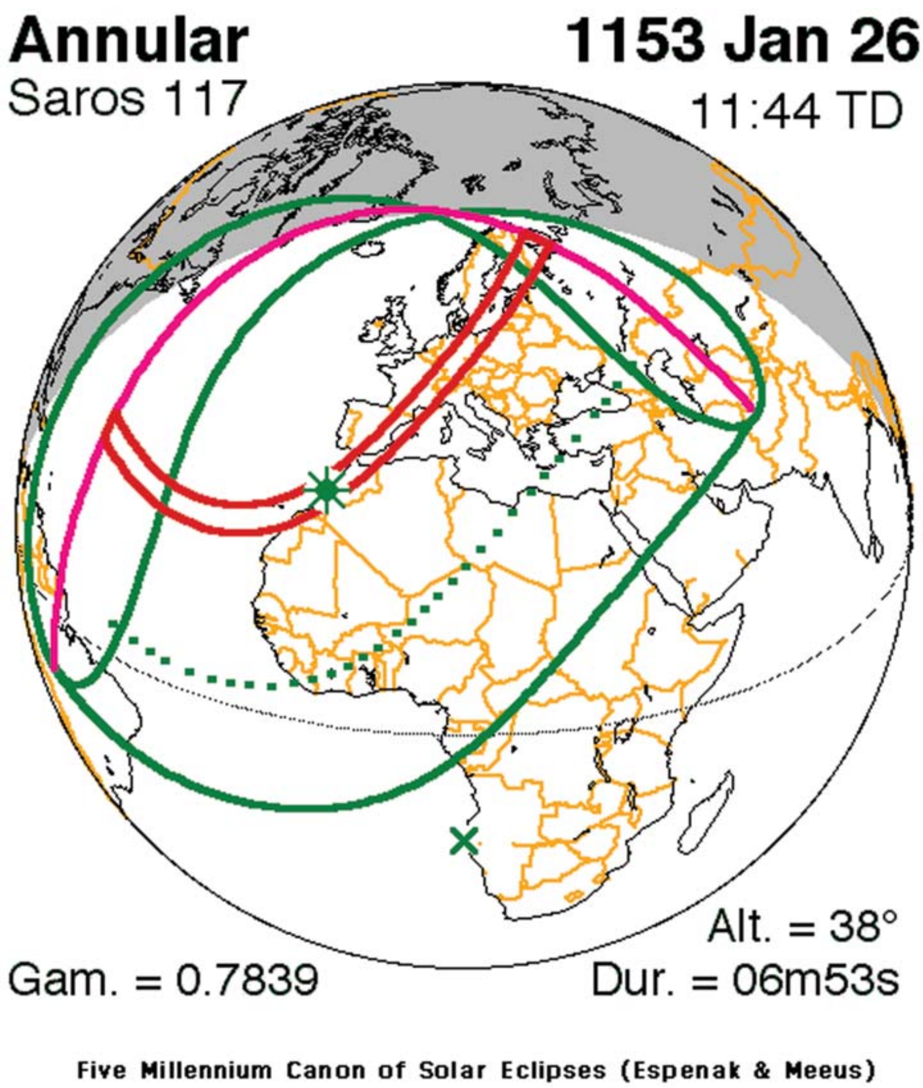
In the different chancelleries the monks tried to do their best in order to re-write and re-adjust the earlier documents for the new system of chronology, but every human activity of recalculation can be a source of errors.

And to make the case more difficult for us a tremendous number of diploms and chronicles dated in the old-style chronology also survived and are available for the researchers.

By the way, thanks to these old-style documents I could discover the dating discrepancies and could reveal the obvious time shift in our calendar.

Let me explain by the means of the few following examples how does the above said work in practice:

1.Several chronicles (Admuntenses, Lambacensis, Aquicenses, Rampona, Dandulus, Bolognetti, Coloniensis, Erphesfurdensis, etc.) have recorded a solar eclipse which according to the retrocalculated dating occurred in 1153 on Jan 26, with a visibility path above Northern-Italy and Germany. Of course in these chronicles the determination of the day, or sometimes also of the year can not be perfect because of the retrocalculation.



http://eclipse.gsfc.nasa.gov/5MCSEmap/1101-1200/1153-01-26.gif

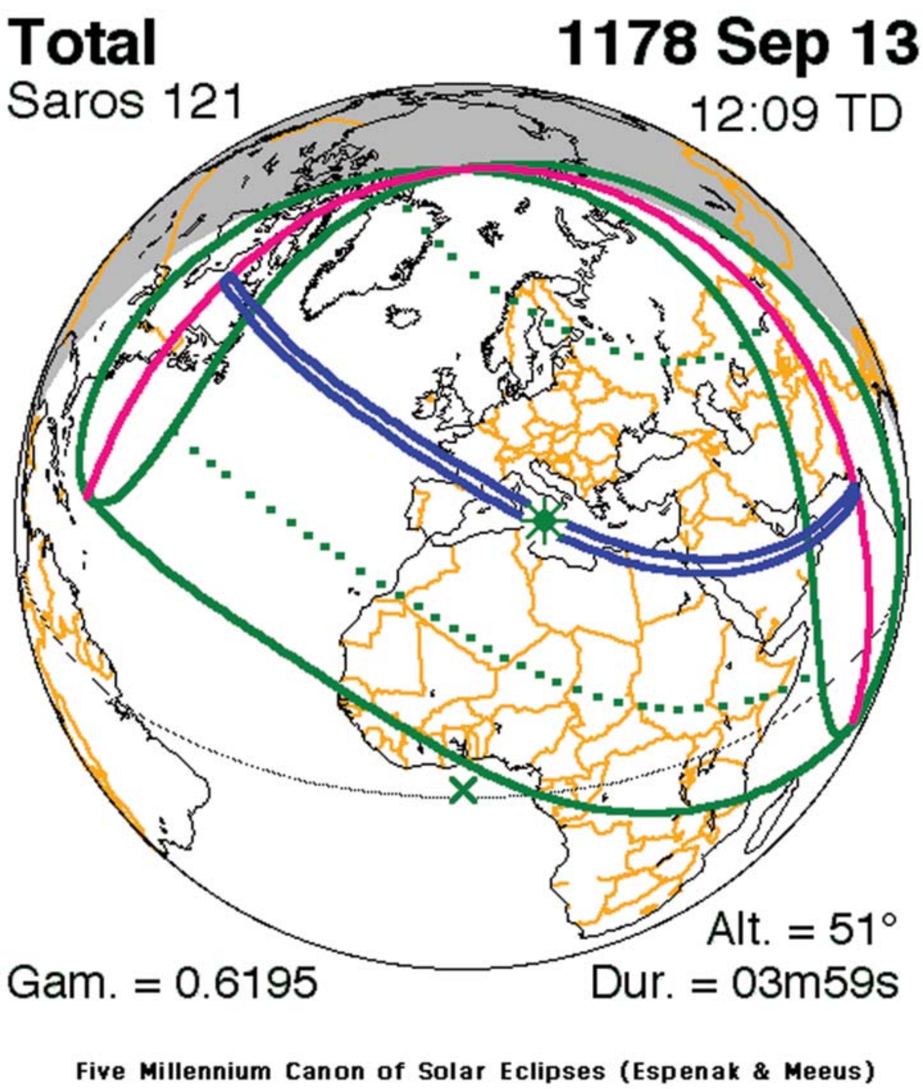
Very luckily for our case we can learn from other historical sources that the „German" king Otto I at the end of January in AD 962 had appeared at the walls of Rome, when a solar eclipse had occurred according to the same sources. At this mentioned astronomical date one can not find any considerable solar eclipse in its close vicinity or further on around it. That is why the more detailed examination of this chronical record (Lupus protospatharius) is neglected.

However from this chronicle we obtained an astronomical historical proof of the fact that Otto I was crowned as Imperator by pope John XII. in early February of 1153 CE.

The same solar eclipse was seen also in Trier and Magdeburg, and the later chroniclers also did not forget about it, although the exactness in recording the year of occurrence is not characteristic in later times.

1153 – 962 = 191 years

2. The same source (Lupus protospatharius) for AD 987 indicates a solar eclipse which of course can not be identified at all. There was an attempt to find something in the vicinity by widening the range of the time interval to five-five years on both sides (AD 982–992) but nothing was found. Turning to the genuine date of this astronomical event: in 1178 CE on Sept 13 there was a solar eclipse in that area (Bari), which was suitable in every aspect.



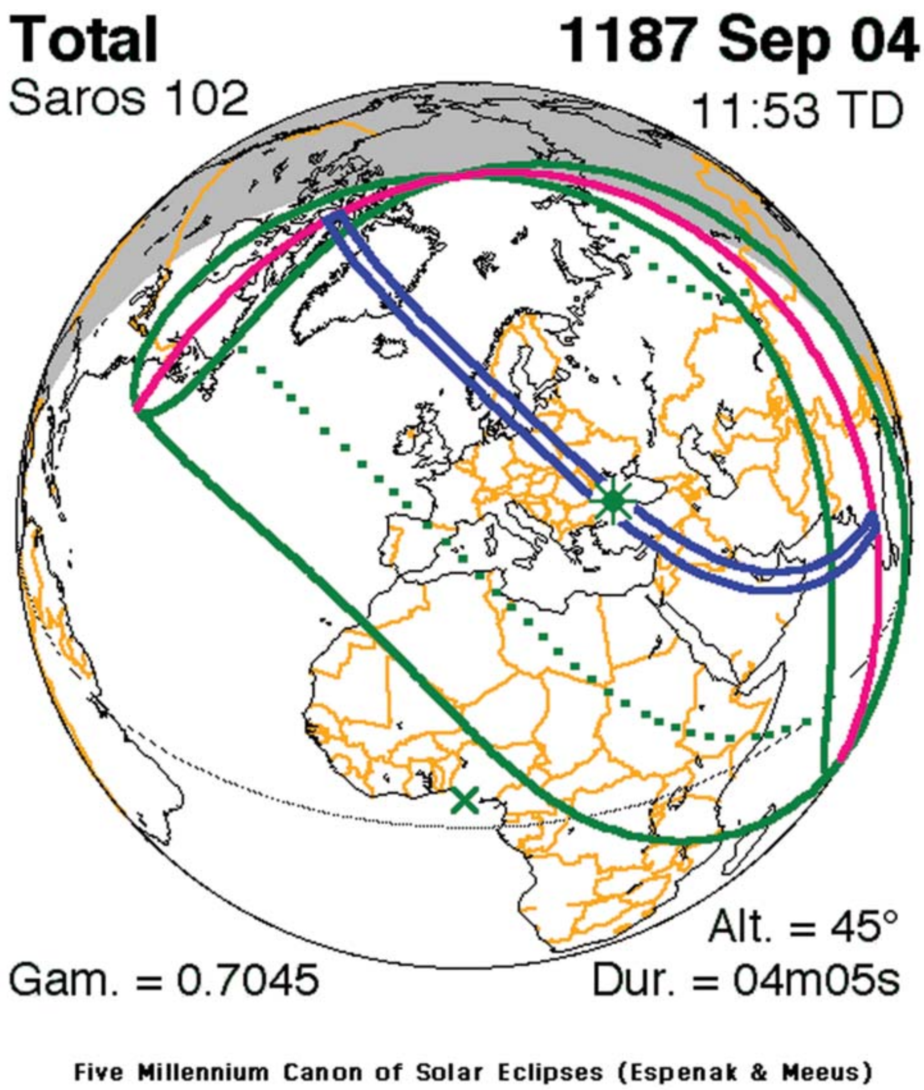
1178 – 987 = 191 years

http://eclipse.gsfc.nasa.gov/5MCSEmap/1101-1200/1178-09-13.gif

3. The Annals of Magdeburg indicate a solar eclipse at the year of AD 992.
At the end of the 12th century the population of that area could see the occurrence of several impressive solar eclipses:

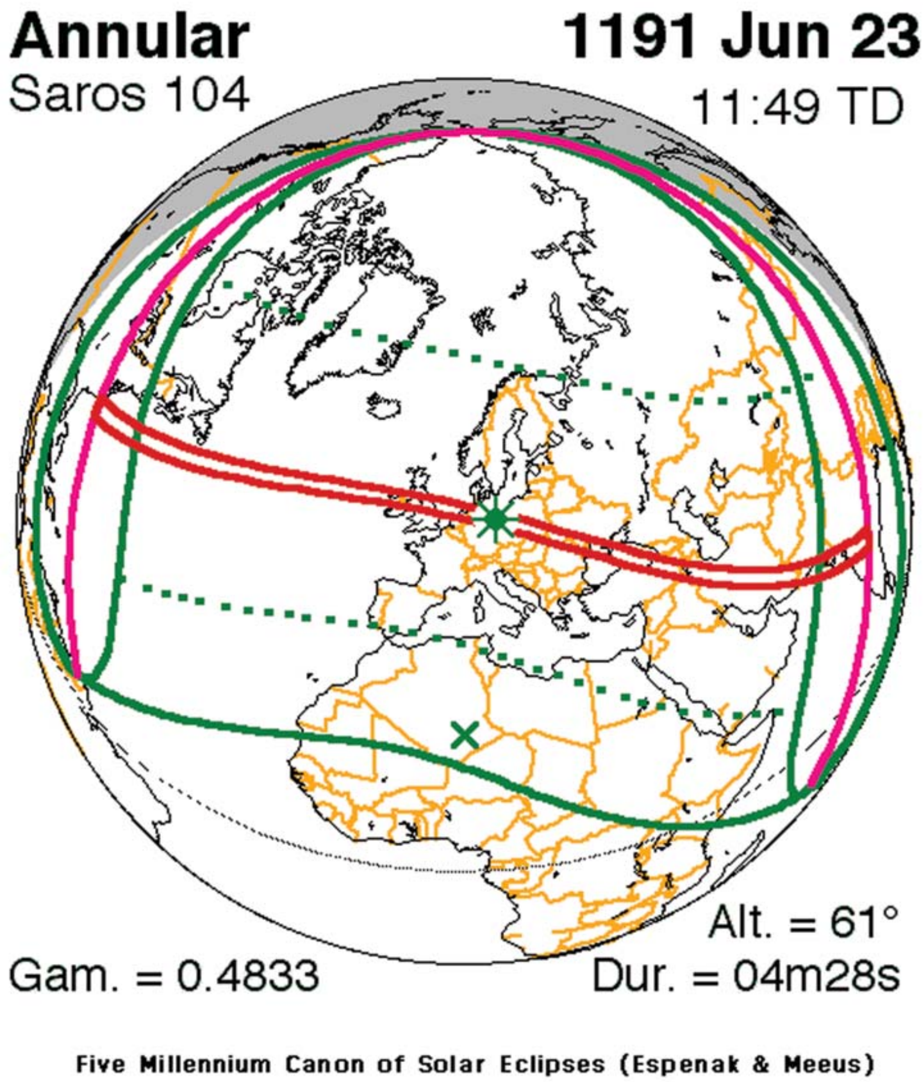
1187 – 992 = 195 years

1191 – 992 = 199 years



http://eclipse.gsfc.nasa.gov/5MCSEmap/1101-1200/1187-09-04.gif

or

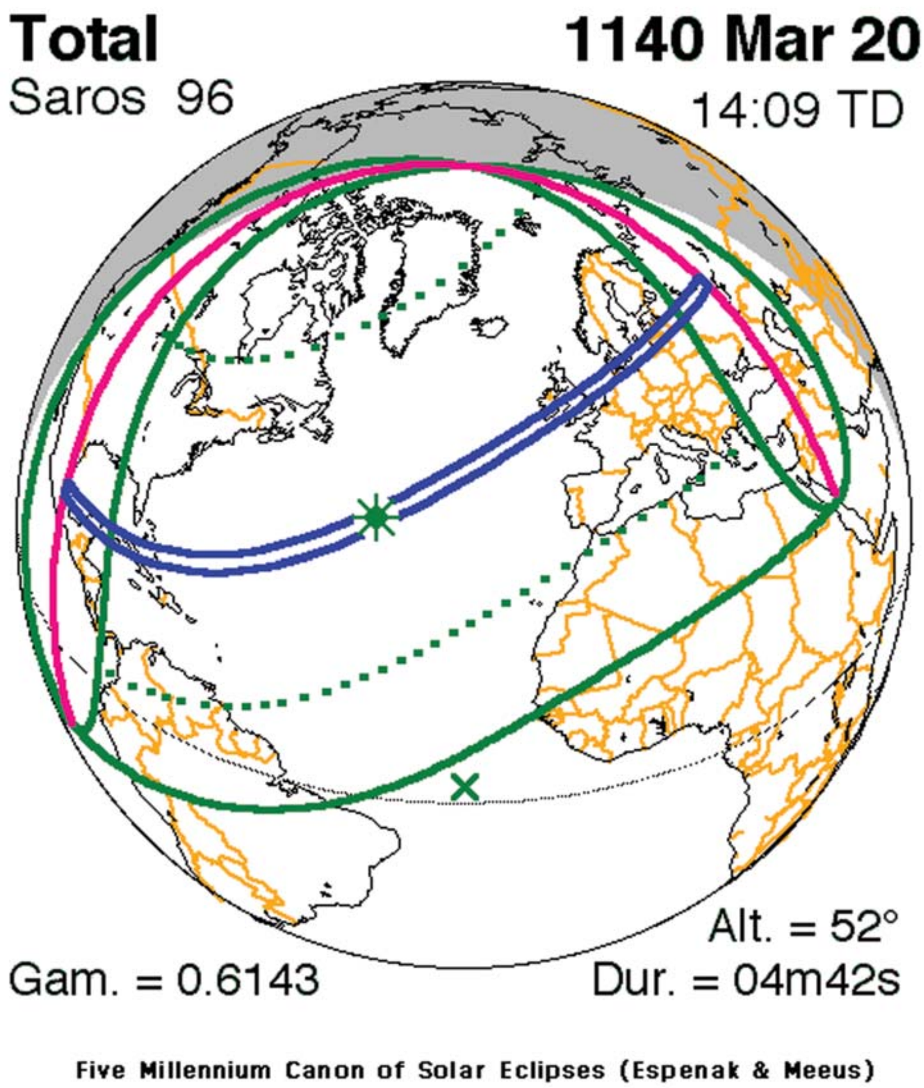


http://eclipse.gsfc.nasa.gov/5MCSEmap/1101-1200/1191-06-23.gif

4. Going further back in historical time, during the reign of Lothar II (AD 948-950) several sources (Annales Polonorum, Martin Oppau, etc.) equally mention solar eclipse. Since the retrocalculation does not show any considerable solar eclipse for that period of time the sources became qualified as inaccurate ones.

However, when we move closer to our own time by 190 years, of course there is a solar eclipse

1140 – 949 = 191 years



http://eclipse.gsfc.nasa.gov/5MCSEmap/1101-1200/1140-03-20.gif

I am not surprised a bit that a difference of 190 years in the identification process of solar eclipses led to the appearance of erroneous values for Delta-T.

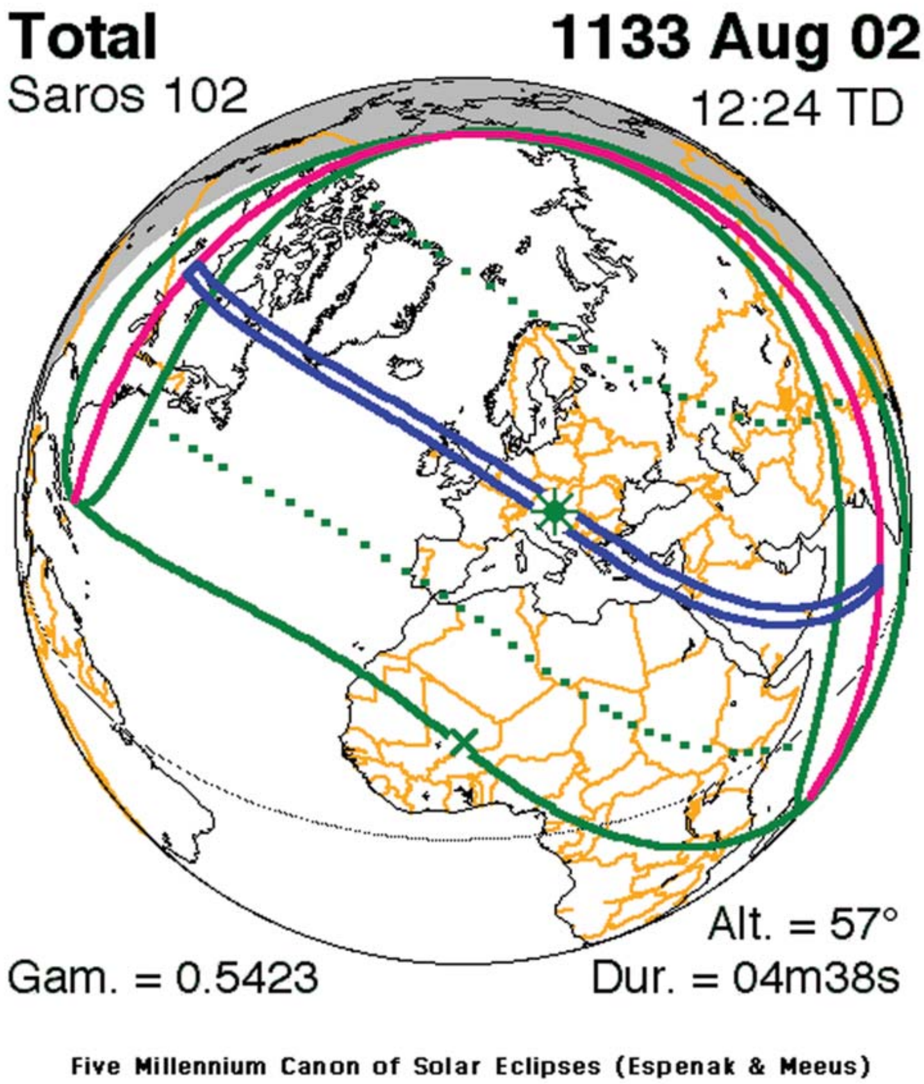
5. Finally, we have also one very important source from the Italian Liudprand. Mentioning a solar eclipse he dates for us the Battle of Simancas. In that fight Ramiro II defeated Abd-ar-Rahman in Northern-Hispania.

Traditionally this event is connected to the solar eclipse which is occurred on July 19 in the AD=CE 939 year. But the memory of the Spaniards denies this date, they remember well that the fighting took place in early August.

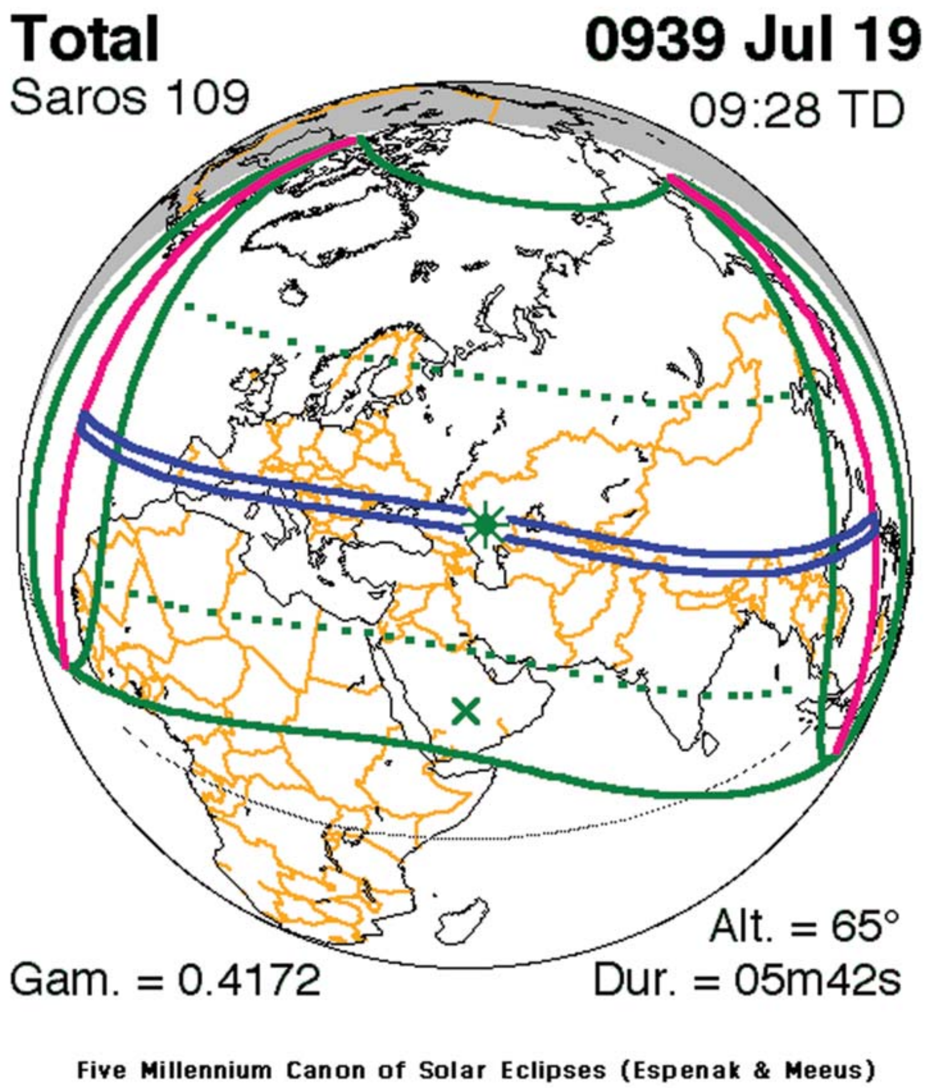
From the Arabian sources Masudi is the one who supports my side when he states that the discussed solar eclipse was seen in Egypt.

The eclipse of 939 was invisible in Egypt, while the eclipse of my offer, the one which occurred on Aug 2nd in the year of 1133 CE was visible there !

1133 – 939 = 194 years



http://eclipse.gsfc.nasa.gov/5MCSEmap/1101-1200/1133-08-02.gif



http://eclipse.gsfc.nasa.gov/5MCSEmap/0901-1000/939-07-19.gif

(It is equally true for both solar eclipses that they happened on Ramadan 28, it is possible because of the difference of 200 lunar years between the two events.)

Since 2002 the Readers of my book the „Hungarian Calendar" can be familiar with the fact that the first year of Hagira (AH 1) equals to the year of 816 CE (instead of the officially recognized AD=CE 622), while the first day of year AH 1 is the same as July 30th in the Julian calendar!

Between the humanist scientists of the 15th century first arose the need to illustrate the history of humanity on the universal astronomical time-axis, and to determine as accurately as possible the dates of birth and crucifixion of Jesus Christ, which dates will be approved by astronomy. Regiomontanus who was an astronomer at the court of King Mathias Corvinus was already capable to retrocalculate very accurately in order to determine the above mentioned dating of past astronomical events. I have no idea, I have never searched for it, that who were those bright humanists who performed their retrocalculation and hiding behind the names of Ibn Yunis they sold their retrocalculations as observations. However the fact remains fact that although they were briliant, they had already made a one hour error in their retrocalculation when they moved as far as 500 years into the distant past.

On the level of their era their performance was perfect, but for the scientists of the 19/20th centuries it is not so glorious that they could not notice the cheating.(That is they could not reveal that they deal with retrocalculations instead of observation or measurement.)

If our scientists were more watchful it would never happen that a certain error of retrocalculation changes to a fact of measurement for them. However this false consideration was accepted, these „measurement „ data were presented as facts in the tables of S. Newcomb and E.W. Brown.

It is quite true that Robert R. Newton exposed Ptolemy calling him as an ancient swindler, fabricator of data, but the data of Ptolemy are still quoted by the scientists in order to support the correctness of the existing chronology.

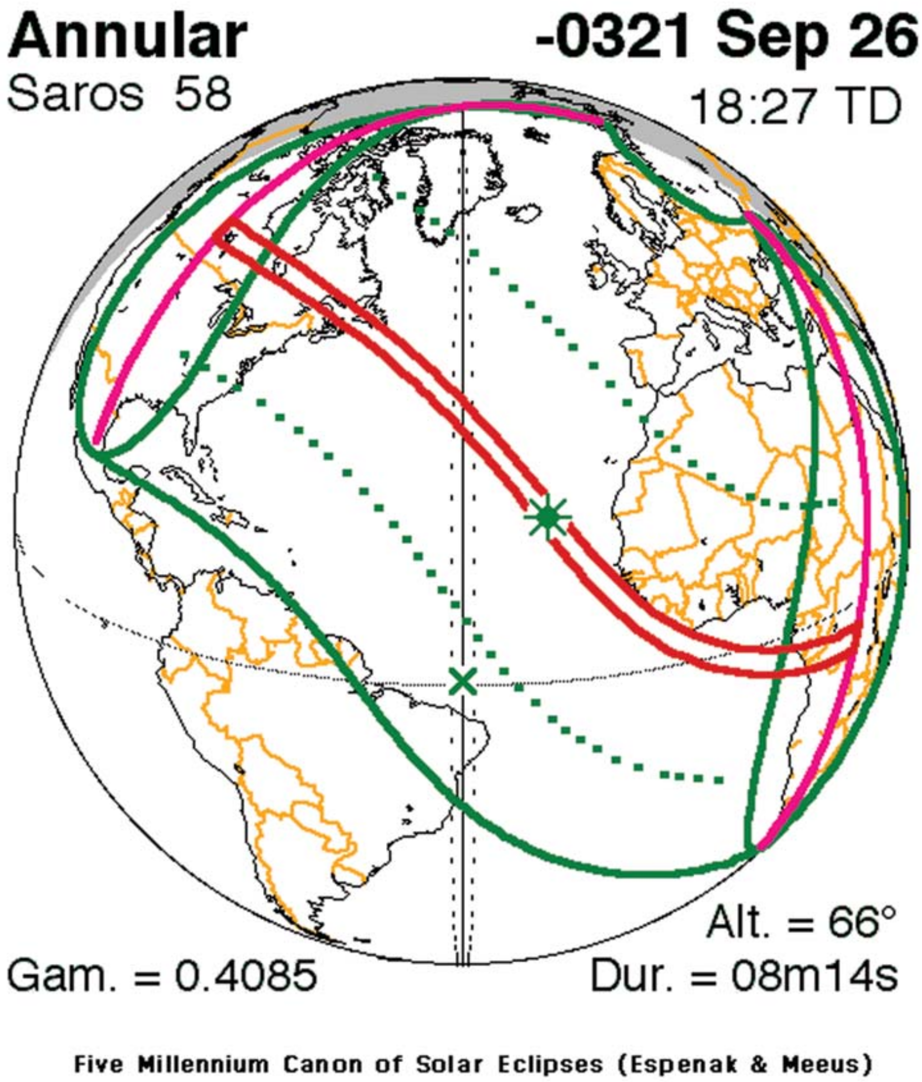
At a 500 years-long time period backward an error of one hour was incorporated into the calculation as a „corner stone" value of delta T, and this initial error generated further cumulative errors. And today we have an error (delta T) of almost 3 hours at a time distance of 2000 years backward.

In addition, because of the Moon's uncertain movements we should count with a cumulative error of maximum one hour.(Practically it means that the real error can alter between 2 and 4 hours.)

Our scientists were continuously trying to produce newer and newer evidences proving the reality of Delta-T, but they did not have any real chanches to give its correct value since they used in their calculations an historical time shifted by 200 years.

In earlier times the biggest ace of presented evidences was the solar eclipse of Sippar. This solar eclipse was valued so greatly that equations of Moon also were adjusted to it.

In the land of former Sippar was found a clay tablet of cunei form writing. On the tablet it was recorded that in the second year of King Philip's reign a solar eclipse had started at 3 degrees, that is at 12 minutes before sunset. The academical science dates this event as Sept 26 of BCE 322 in the Julian calendar.



http://eclipse.gsfc.nasa.gov/5MCSEmap/-0399—0300/-321-09-26.gif

Using the available data of this solar eclipse our scientists improved the value of the Delta-T.

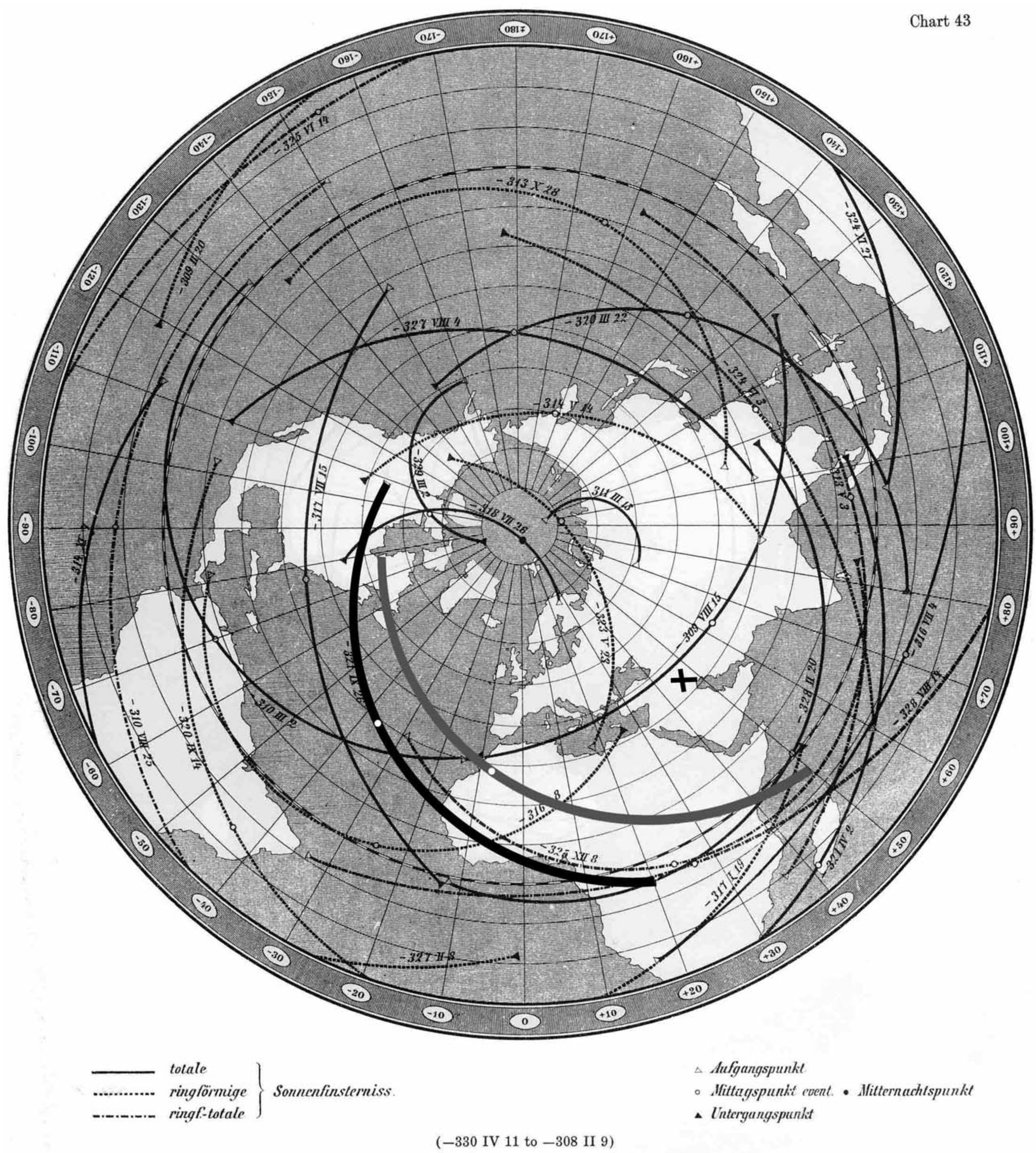
They considered the data on different ways, according their own opinion.

This observation was used by Fotheringham (1935) in an investigation of the lunar and solar accelerations on UT. However, he used an incorrect value (4 deg) for the interval between the start of the eclipse and sunset.

I have never tried to check the way of Fotheringham's thinking, but I have a guess: if he decided to shift by 30 degrees to the east the chart of the solar eclipse (illustrated on the globe by Theodor Ritter von Oppolzer), then he got the picture of a solar eclipse which was very similar to the mistakenly dated Babylonian observation.

And the situation forced him to modify the equations according to, that is to make to start the solar eclipse at 16 minutes before sunset on Sept 26 of the year of BCE 322.This modification was basical that time for the Delta-T value of 3 hours and 40 minutes (13200 sec).

Oppolzer's Canon



-321. september 26.

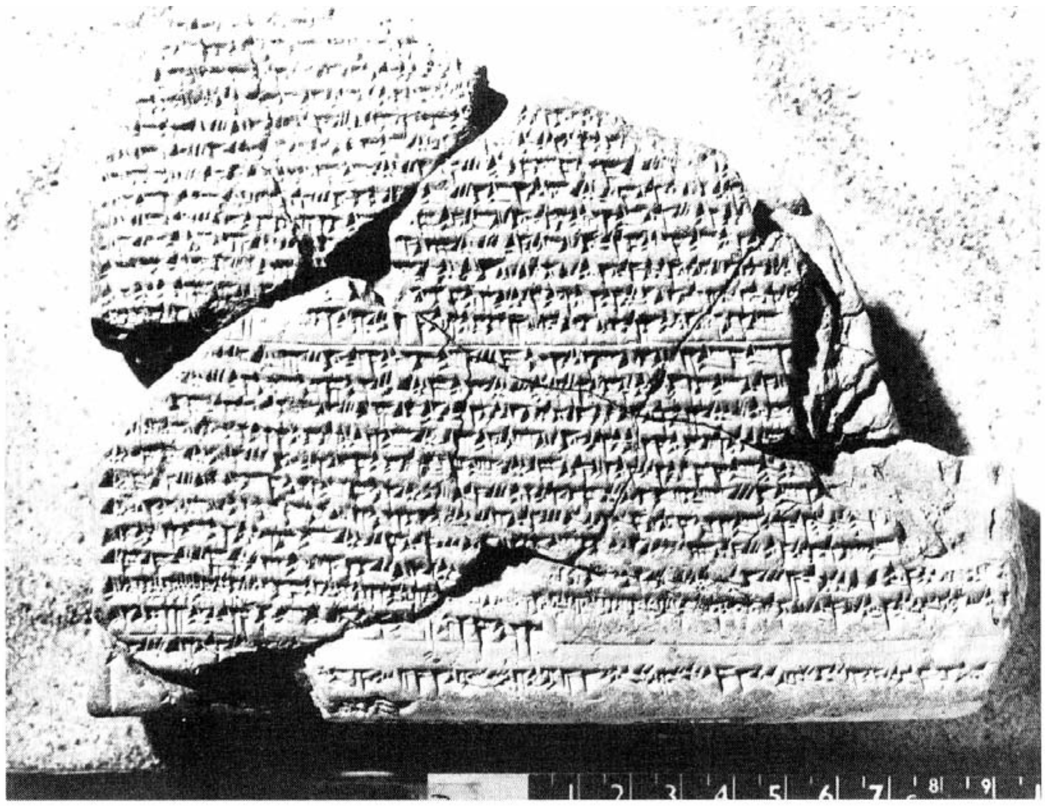


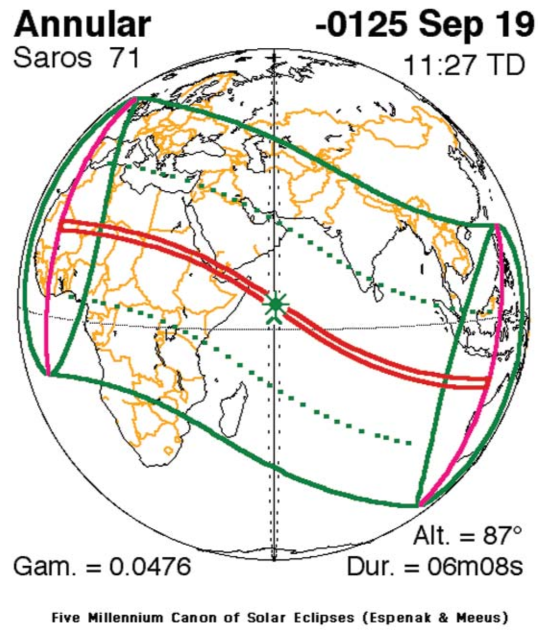
Fig. 5.2 A photograph of the reverse of British Museum Tablet 34093 (an astronomical diary) containing a record of the sunset eclipse of 322 BC as seen from Babylon.

Fig. 5.2 Historical eclipses, and earth's rotation, F Richard Stephenson Cambridge University Press 1997)

F. Richard Stephenson's version after his calculations for the Delta-T was as much as 14150 sec. Fred Espenak's offer for the same value was exactly 4 hours, that is 14400 sec, and this is the amount which is shown in the tables of NASA.

The situation will be changed revolutionary after the application of my "Seleucid code" which directs us to the correct dating: the solar eclipse recorded on the discussed clay tablet occurred on Sept 19 in the BCE 126 year of the Julian calendar!

322 – 126 = 196 years



http://eclipse.gsfc.nasa.gov/5MCSEmap/-0199--0100/-125-09-19.gif

It should be admitted that in this case we must also shift on the globe the visible path of the solar eclipse, but in the opposite direction, to the west.

Using the Delta-T program of (Heinz Scsibrany) and setting the value at -3600 sec we can have complete synchronization with the records of the clay tablet.

http://www.lcm.tuwien.ac.at/scs/welcome.htm

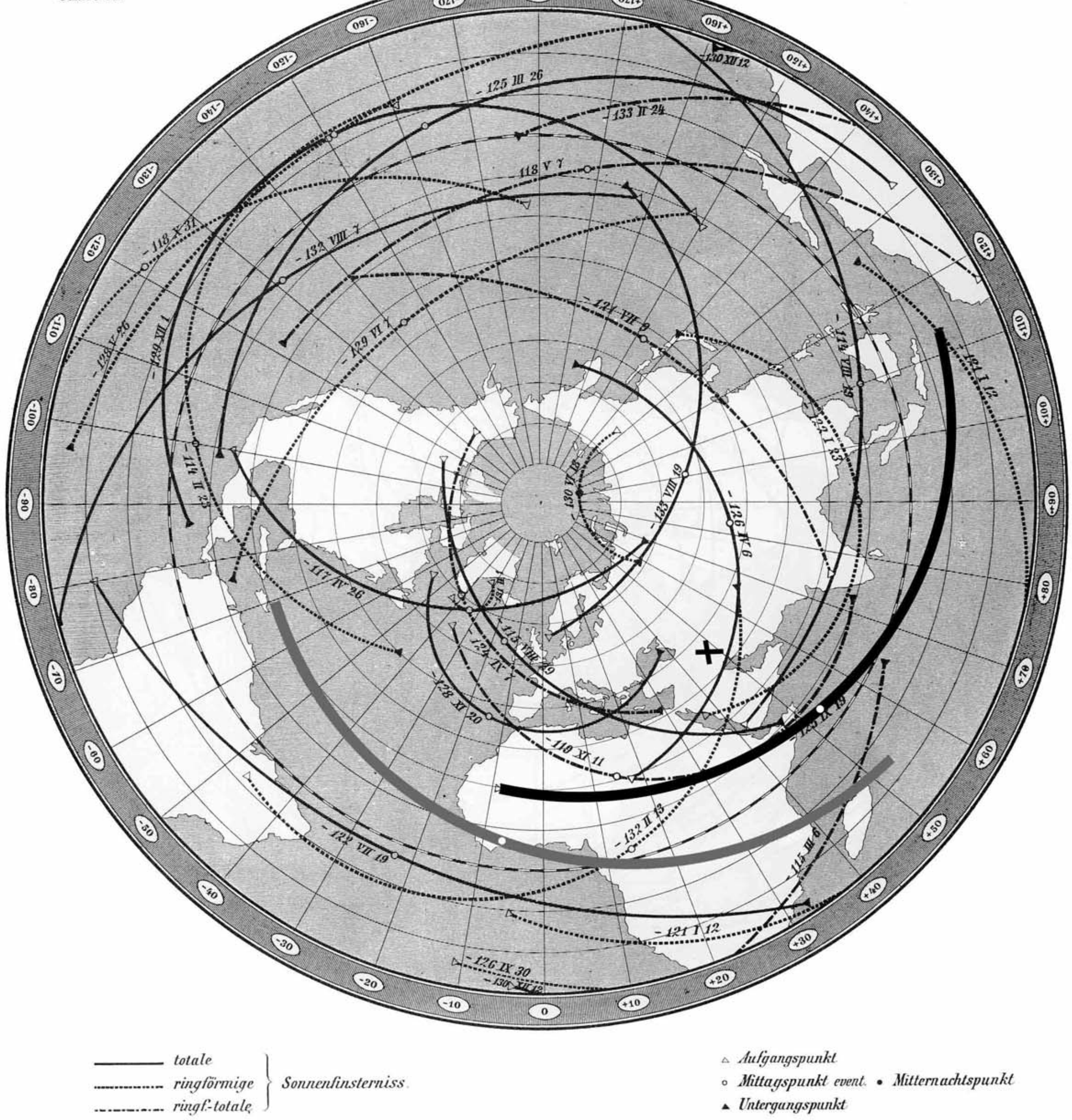
My firm opinion is that the value of -3600 sec (1 hour) is only an error of retrocalculation, as I mentioned it earlier it is just coming from cumulative error because of the erroneous initial data.

-125. september 19. with -3600 sec Delta-T

Oppolzer's Canon

Summarizing the above said: Taking the correct initial data for a new start to retrocalculate the solar eclipses, in my opinion we will have a surprising outcome.

Chart 52



(−134 IV 4 to −114 VIII 19)

It will become a fact that for the passed 2200 years the value of Delta-T with great certainty will converge to zero...