

# VLA's Canon of Observed Ancient Solar Eclipses

based on a constant deceleration Model of the Earth

$$\Delta T = 30.65 * t^2 \text{ [s]} \text{ where } t = (36524.24)^{-1} * (JD - 2'398'000.5) \text{ [cy]}$$

described in <http://www.archaeometry.org/titanic.pdf>

Retrodictions are made thanks to X.JUBIER's 5MCSE freeware in the "&DdT=1"-mode, e.g.:

[http://xjubier.free.fr/site\\_pages/solar\\_eclipses/xSE\\_GoogleMapFull.php?Ecl=+19120417&Acc=2&Umb=1&Lmt=1&Mag=0&Lat=49.41497&Lng=2.93697&Elv=900.0&LC=1&Zoom=15&DdT=1](http://xjubier.free.fr/site_pages/solar_eclipses/xSE_GoogleMapFull.php?Ecl=+19120417&Acc=2&Umb=1&Lmt=1&Mag=0&Lat=49.41497&Lng=2.93697&Elv=900.0&LC=1&Zoom=15&DdT=1)

SAROS / #	JD (Julian Day) Common Chronology [yy/mm/dd] t [cy]	$\Delta T$ [s]	Appellation Site GPS Co-ordinates	Universal Time @ Max. Eclipse Sun Altitude	Magnitude. type Duration [m/s]
23/ 14	1 023 332 -1911.09.24	43'417	PANG "Double Sunset" Sanmiao Changde E111.7° / N29.01°	10:45 1°	0.967 annular
26/ 38	1 232 852 -1337.05.14	31'191	AKHENATEN Thèbes E32.64/N25.697 Tell el-Amarna E30.90 /N27.67	12:25 50° 12:22 52°	0.941  1.009 3m 50s
35/32	1 242 390 -1311.06.24	30'682	MURSILI II bad omen Çorum / 60km N-Hattussa E 34.94 / 40.55	11:22 61°	1.007 2m 05s
44/ 42	1 462 659 -708.07.17	20'100	LU HUAN GONG Chinese Annals # 1 Jining E116.576 /N35.401	07:53 41°	1.004 1m 53s
57/ 33	1 507 900 -584.05.28	18'203	THALES of Miletos Lydian-Median Battle Halas E28.5/N39.0	16:00 12°	1.032 3m 34s
50/ 41	1 545 847 -480.04.19	16'684	GAUBIL Chinese Annals # 35 Shanghai E121.47 /N31.25	05:08 62°	1.022 4m 39s
42/ 62	1 546 881 -477.02.17	16'643	PINDAR Thiva E23.38 /N38.36	10:07 37°	0.961 annular 5m 25s
50 /42	1 552 432 -462.04.30	16'427	TANIT's rise ? Carthago E10.32 /N36.83	12:39 49°	0.985
69/ 24	1 608 421 -309.08.15	14'324	AGATHOCLES' escape Syracuse E15.29 / N37.07	06:32 28°	0.999
56/ 56	1 655 376 -180.03.04	12'670	Chang'an E108.94 / N34.26	07:33 34°	1.005 2m 02 S
75/ 27	1 671 854 -135.04.15	12'115	Souan E32.89/N24.09 Babel Tower/Babylon E44.421 / N32.536	05:03 21° 05:24 34°	1.006 1m 53s 1.002 1m 09 s
79/ 18	1 674 630 -128.11.20	12'022	HIPPARCHUS Çanakkale/Hellespont E26.398 / N40.146 Alexandria E29.9 / N 31.2	13:47 11° 14:01 11°	1.002 0m 17s 0.791

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62/ 52	1 731 978 +29.11.24	10'192	<b>PHLEGON</b> Niceaea ( <i>Iznik</i> ) E29.711 / N40.427	08:33 26°	1.000 0m 22s
62/ 54	1 745 149 +65.12.16	9'792	<b>BUDDHA's rise</b> (CHU dynasty) Xuzhou ( <i>Jiangsu</i> ) E117.15 / N 34.25	02:15 26°	0.997
79/29	1 747 069 +71.03.20	9'735	<b>PLUTARCH's</b> Athens E23.727 /N37.97	09:39 48°	1.001 0m 28s
93/ 23	1 855 563 +368.04.04	6'760	<b>PANG's Double Dawn</b> Zheng ( <i>Hua Prefect.</i> ) E109.767 /N34.517	22:15 -2.4°	0.989 annular
91/35	1 887 103 +454.08.10	5'997	<b>LIU-SONG</b> Jiankang ( <i>Nanjing</i> ) E118.74 / N32.10	00:42 40°	1.001 0m 49s
97/ 21	1 897 852 +484.01.14	5'747	<b>MARINUS Double Dawn</b> Athens E23.72 /37.97	05:45 -0.6°	0.991
90/ 55	2 027 993 1 <sup>st</sup> dated observation +840.05.05	3'145	<b>csg - 0915 - 204</b> St-Gallen E 9.376 / N 47.423 <b>ANDREAS Bergomatis</b> Bergamo E9.66 / N45.70	12:38 56° 12:39 57°	1.005 2m 41s 1.017 4m 36s
115/ 18	2 074 976 +968.12.22	2'397	<b>Leo the DEACON</b> Constantinople E28.957 / N41.002	09:14 24°	1.009 2m 16s
111/ 29	2 098 541 +1033.06.29	2'060	<b>...vraiment terrible</b> Cluny E4.659 / N 46.434	11:13 66°	0.978 central annular
102/ 39	2 108 759 +1061.06.20	1'922	<b>AL-JAWSI</b> Baghdad E44.407 /N33.304	04:31 31°	1.010 2m 45s
102/ 43	2 135 100 +1133.08.02	1'588	<b>HONORE d'Autun</b> Regensburg E12.0886 /N49.01886	11:44. 57°	1.006 2m 41s
121/ 14	2 151 578 +1178.09.13	1'395	<b>ADELBERT III</b> Mende E 3.498/N44.517	11:16 47°	1.010 3m 03s
115/ 30	2 154 000 +1185.05.01	1'368	Novgorod E31.266 / N 58.54	14:24 26°	1.015 3m 17s
102/ 49	2 174 612 +1241.10.06	1'146	Split E16.487 /N43.517	11:58 36°	0.998

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115/ 33	2 173 756 +1239.06.03	1'155	Coimbra W8.412/N40.221 Toledo W4.02 /N39.85 Mende E3.498/N 44.517 Montpellier E3.88/N43.61 Firenze E11.21/N43.8 Siena E11.3/ N 43.3 Arezzo E11.87/N43.46 Cesena E12.25/N44.15 Split E16.47/N43.53	11:35 / 69° 11:43 / 72° 12:00 / 68° 12:01 / 69° 12:14 / 66° 12:14 / 66° 12:15 / 66° 12:16 / 65° 12:22 / 62°	1.012 / 4m 14s 1.011 / 4m 16s 0.976 1.007 / 3m 19s 1.031 / 5m 43s 1.030 / 5m 42s 1.033 / 5m 47s 1.021 / 5m 11s 1.029 / 5m 33s
108/ 46	2 218 288 +1361.05.05	742	PANG's 2nd Double sunset Songjiang E121.2 / N31.0	10:22 3°	1.008 1m 52s
102/ 57	2 227 295 +1386.01.01	670	Montpellier E3.871/N43.611	09:45 18°	1.009 2m 15s
108/ 49	2 238 043 +1415.06.07	588	Montpellier E3.87/N43.61	05:55 18°	1.022 3m 11s
121/ 28	2 243 773 +1431.02.12	547	Antonio dei VEGHI Perugia E12.388/43.112	14:38 20°	1.007 2m 03s
118/43	2 291 081 +1560.08.21	263	CLAVIUS Coimbra E8.412/ N40.221	11.47 57°	0.996
112/ 58	2 293 503 +1567.04.09	251	CLAVIUS (Chr. KLAU) Vatican E12.457 / N41.902	11:18 59°	0.997 pearled
137/ 13	2 307 559 1605.10.12	188	"La Noirceur" Marseille E5.373 / N43.296	13:04 34°	.985
133/ 25	2 324 539 +1652.04.08	124	Dr WYBERD Carrickfergus-Kippen W4.18053 /N 64.1238	10:35 37°	1.003 1m 34s
133/ 28	2 344 294 +1706.05.12	66	Montpellier E3.871/N43.611	09:08 49°	1.019 3m 43s
114/ 60	2 347 573 +1715.05.03	58	John FLAMSTEED Greenwich E0.0 / N51.4777	09:07 41°	1.014 3m 22s
133/29	2 350 880 +1724.05.22	51	CASSINI & LOUIS-XV Trianon E2.1042/N48.8140 DESLILE Observatoire Paris E2.33722 / N48.83639	Observed C3 18:38:05 C3: 18:37:33 8°	1.012 2m 17s
124/45	2 394 024 +1842.07.08	0	François ARAGO Perpignan E2.895 /N 42.698 Montpellier E3.871/N43.611	05:37 12° 05:38 13°	1.020 2m 17s 1.009 1m 55s

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126 / 41	2 415 168 +1900.05.28	7	<b>Théophile MOREUX</b> Palmeral of Elche W 0.72 / N 38.26 <b>A.C. CROMMELIN</b> & <b>E.W. MAUNDER</b> El-Jazair / Algiers E3.07 / N 36.7-	<b>16:13</b> 34° <b>16:18</b> 30°	<b>1.007</b> 1m 14s <b>1.004</b> 0m 56s
143 / 17	2 417 088 +1905.08.30	8	<b>Théophile MOREUX</b> Sfax E 10.774 / N 34.722	<b>13:43</b> 48°	<b>1.021</b> 3m 29s
137/ 30	2 419 510 +1912.04.17	10.6	<b>Dr. GRAFF</b> Hagenow-Stadt (#3) E11.1967/N53.4360 <b>Paul TISSANDIER</b> Balloon Globule E2.93697/N49.41497 /900 m <b>F. QUENISSET</b> Savigny s/Orge E2.371 /N48.693 <b>Costa LOBO</b> Ovar #10 W8.5977 /N40.85456	<b>C3 :12:26:01</b> Observed 12:25:47.5 45° <b>12:11:54</b> observed 12:11:51 51° <b>12:10 :19</b> 51° <b>11:42 :44</b> C3 obs. 11:43:04 58°	<b>0.99907</b> annular 8.1 s <b>0.99948</b> annular 1.2 s <b>0.992</b> partial <b>0.99936</b> partial
120/56	2 424 175 +1925.01.24	16	<b>South-edge</b> NYC Broadway/86th W 73.976 / N 40.788	<b>C3: 14:11</b>	<b>1.000</b> 0m 20 s
120/58	2 437 346 +1961.02.15	36	<b>Montélimar</b> E 4.75 / N 44.55 <b>Varna</b> E27.91 / N43.20	<b>07:33</b> 8° <b>07:56</b> 25°	<b>1.015</b> 1m 56 <b>1.005</b> 1m 51
142/ 21	2 446 027 +1984.11.22	53	<b>Serge KOUTCHMY</b> Aircraft Guardian E164.9486/ S22.5902 11000 m	<b>C3: 21:54:04</b> observed 21:54:04. 50°	<b>1.006</b>
145/ 21	2 451 402 +1999.08.11	66	<b>VLA</b> Šhabla E28.55 / N 43.58	<b>11:17</b> 59°	<b>1.014</b> 2m 21
142/ 22	2 452 612 +2002.12.04	69	<b>VLA</b> Mavinga E20.36 / S15.79	<b>06:03:07</b> 27°	<b>1.002</b> 0m 40s
134/ 43	2 453 646 +2005.10.03	71	<b>VLA</b> Pitiüses E1.41887/ N38.7347	<b>09:03:47</b> Observed 09:03:55 34°	<b>0.960</b> annular 3m 17s
139/ 29	2 453 824 +2006.03.29	72	<b>VLA</b> Mt Al Sallum E25.13 N31.58	<b>10:39:57</b> 62°	<b>1.022</b> 3m 57s