

Minor Planets

Cosmic Octave Tuning Data



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Please note:

Commas in German writing = , (instead of .)

Date of last obs. = Last observation used in the fit

Date in German writing = day.month.year

hz. = Frequency in Hertz (cycle per second)

oct. = Number of octaves from the period

A¹ = Corresponding concert pitch A

cent = deviation +/-50 cent from 440 Hz

bpm = beats per minute

Classifications:

Atira: An asteroid orbit contained entirely within the orbit of the Earth ($Q < 0.983$ au). Also known as an Interior Earth Object.

Aten: Near-Earth asteroid orbits similar to that of 2062 Aten ($a < 1.0$ au; $Q > 0.983$ au).

Amor: Near-Earth asteroid orbits similar to that of 1221 Amor (1.017 au $< q < 1.3$ au).

| Celestial Body | | Period | | Date of last obs. | Tone | | | a' Hz | cent +/- 50 | Tempo bpm | NASA source |
|----------------------------------|-------|---------|------|----------------------|---------------|------|------|----------|----------------|--------------|----------------------|
| | | days | year | | hz | note | oct. | | | | |
| MERKUR | | 87,969 | 0,24 | | 141,27 | C# | 30 | 448,51 | 33,2 | 66,2 | |
| 2020 AV2 | Atira | 151,191 | 0,41 | 23.01.2020 | 164,40 | E | 31 | 438,88 | -4,4 | 77,1 | Link |
| VENUS | | 224,701 | 0,62 | | 221,23 | A | 32 | 442,46 | 9,6 | 103,7 | |
| 367943 Duende (2012 DA14) | Aten | 317,206 | 0,87 | 21.02.2013 | 156,71 | D# | 32 | 443,25 | 12,7 | 73,5 | Link |
| 2062 Aten | Aten | 347,213 | 0,95 | 06.02.2015 | 143,17 | D | 32 | 429,02 | -43,7 | 67,1 | Link |

APOLLO Near-Earth asteroid orbits which cross the Earth's orbit similar to that of 1862 Apollo ($a > 1.0$ au; $q < 1.017$ au).

| ERDE | | 365,256 | 1,00 | | 136,10 | C# | | 432,10 | -31,4 | 63,8 | |
|----------------------------------|---------------|----------|------|------------|---------------|----|----|--------|-------|-------|----------------------|
| 4581 Asclepius (1989 FC) | | 377,729 | 1,03 | 10.05.2019 | 131,60 | C | 32 | 442,66 | 10,4 | 61,7 | Link |
| 2020 CD3 | | 377,757 | 1,03 | 27.02.2020 | 131,59 | C | 32 | 442,62 | 10,3 | 61,7 | Link |
| 2063 Bacchus (1977 HB) | | 408,871 | 1,12 | 31.05.2016 | 243,16 | B | 33 | 433,26 | -26,7 | 114,0 | Link |
| 25143 Itokawa (1998 SF36) | | 556,530 | 1,52 | 04.02.2019 | 178,64 | F | 33 | 450,15 | 39,5 | 83,7 | Link |
| 1685 Toro (1948 OA) | | 584,158 | 1,60 | 15.06.2019 | 170,19 | F | 33 | 428,86 | -44,4 | 79,8 | Link |
| 4450 Pan (1987 SY) | | 632,805 | 1,73 | 31.01.2020 | 157,11 | D# | 33 | 444,38 | 17,1 | 73,6 | Link |
| 433 Eros (A898 PA) | Amor | 643,065 | 1,76 | 13.02.2019 | 154,60 | D# | 33 | 437,29 | -10,7 | 72,5 | Link |
| 1864 Daedalus (1971 FA) | | 644,965 | 1,77 | 07.02.2020 | 154,15 | D# | 33 | 436,00 | -15,8 | 72,3 | Link |
| 1862 Apollo (1932 HA) | | 651,220 | 1,78 | 27.04.2019 | 152,67 | D# | 33 | 431,81 | -32,5 | 71,6 | Link |
| MARS | | 686,980 | 1,88 | | 144,72 | D | 33 | 433,67 | -25,1 | 67,8 | |
| 385250 (2001 DH47) | Mars crossing | 687,057 | 1,88 | 23.04.2018 | 144,70 | D | 33 | 433,62 | -25,3 | 67,8 | Link |
| 1866 Sisyphus (1972 XA) | | 951,842 | 2,61 | 07.02.2020 | 208,90 | G# | 34 | 442,65 | 10,4 | 97,9 | Link |
| 1221 Amor (1932 EA1) | Amor | 971,359 | 2,66 | 24.01.2020 | 204,70 | G# | 43 | 433,75 | -24,8 | 96,0 | Link |
| 2212 Hephaistos (1978 SB) | | 1158,874 | 3,17 | 25.11.2019 | 171,58 | F | 34 | 432,36 | -30,3 | 80,4 | Link |

MAIN-BELT ASTEROIDS Asteroids with orbital elements constrained by (2.0 au $< a < 3.2$ au; $q > 1.666$ au).

| | | | | | | | | | | | |
|------------------------------|--|----------|------|------------|---------------|---|----|--------|-------|------|----------------------|
| 149 Medusa | | 1171,204 | 3,21 | 06.01.2020 | 169,77 | F | 34 | 427,81 | -48,7 | 79,6 | Link |
| 8 Flora | | 1193,030 | 3,27 | 13.05.2019 | 166,67 | E | 34 | 444,95 | 19,4 | 78,1 | Link |
| 422 Berolina | | 1215,178 | 3,33 | 05.02.2020 | 163,63 | E | 34 | 436,84 | -12,5 | 76,7 | Link |
| 4150 Starr (1984 QC1) | | 1218,320 | 3,34 | 16.06.2020 | 163,21 | E | 34 | 435,72 | -16,9 | 76,5 | Link |

Solar System

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|----------------------------------|----------|------|------------|---------------|----|----|--------|-------|-------|----------------------|
| 4148 McCartney (1983 NT) | 1228,942 | 3,36 | 15.06.2020 | 161,80 | E | 34 | 431,95 | -33,0 | 75,8 | Link |
| 1198 Atlantis (1931 RA) | 1233,850 | 3,38 | 05.01.2020 | 161,16 | E | 34 | 430,23 | -38,9 | 75,5 | Link |
| 8749 Beatles (1998 GJ10) | 1235,923 | 3,38 | 06.07.2019 | 160,88 | E | 34 | 429,51 | -41,8 | 75,4 | Link |
| 5731 Zeus (1988 VP4) | 1244,642 | 3,41 | 02.10.2018 | 159,76 | D# | 34 | 451,86 | 46,1 | 74,9 | Link |
| 40 Harmonia | 1246,649 | 3,41 | 07.01.2020 | 159,50 | D# | 34 | 451,14 | 43,3 | 74,8 | Link |
| 896 Sphinx (A918 PE) | 1262,280 | 3,46 | 03.01.2020 | 157,53 | D# | 34 | 445,55 | 21,7 | 73,8 | Link |
| 2202 Pele (1972 RA) | 1265,970 | 3,47 | 12.02.2018 | 157,07 | D# | 34 | 444,25 | 16,6 | 73,6 | Link |
| 19383 Rolling Stones (1998 BZ32) | 1281,949 | 3,51 | 17.06.2020 | 155,11 | D# | 34 | 438,71 | -5,1 | 72,7 | Link |
| 337044 Bobdylan (1996 DB5) | 1299,589 | 3,56 | 03.10.2019 | 153,00 | D# | 34 | 432,76 | -28,7 | 71,7 | Link |
| 27 Euterpe | 1312,668 | 3,59 | 06.01.2020 | 151,48 | D# | 34 | 428,45 | -46,1 | 71,0 | Link |
| 4147 Lennon (1983 AY) | 1325,642 | 3,63 | 17.06.2020 | 150,00 | D | 34 | 449,48 | 36,9 | 70,3 | Link |
| 4 Vesta | 1325,935 | 3,63 | 23.03.2017 | 149,96 | D | 34 | 449,38 | 36,5 | 70,3 | Link |
| 30 Urania | 1328,521 | 3,64 | 06.12.2019 | 149,67 | D | 34 | 448,51 | 33,1 | 70,2 | Link |
| 105 Artemis | 1335,871 | 3,66 | 03.02.2020 | 148,85 | D | 34 | 446,04 | 23,6 | 69,8 | Link |
| 9 Metis | 1346,890 | 3,69 | 17.05.2018 | 147,63 | D | 34 | 442,39 | 9,4 | 69,2 | Link |
| 7 Iris | 1347,347 | 3,69 | 19.08.2019 | 147,58 | D | 34 | 442,24 | 8,8 | 69,2 | Link |
| 17473 Freddiemercury (1991 FM3) | 1349,257 | 3,69 | 06.12.2019 | 147,37 | D | 34 | 441,61 | 6,3 | 69,1 | Link |
| 60 Echo | 1351,359 | 3,70 | 08.01.2020 | 147,14 | D | 34 | 440,93 | 3,6 | 69,0 | Link |
| 4227 Kaali (1942 DC) | 1354,357 | 3,71 | 07.01.2020 | 146,82 | D | 34 | 439,95 | -0,2 | 68,8 | Link |
| 273 Atropos | 1354,170 | 3,71 | 07.01.2020 | 146,84 | D | 34 | 440,01 | 0,0 | 68,8 | Link |
| 1108 Demeter (1929 KA) | 1381,749 | 3,78 | 11.05.2019 | 143,91 | D | 34 | 431,23 | -34,9 | 67,5 | Link |
| 42 Isis | 1393,904 | 3,82 | 07.01.2020 | 142,65 | C# | 34 | 452,89 | 50,0 | 66,9 | Link |
| 19367 Pink Floyd (1997 XW3) | 1396,640 | 3,82 | 24.11.2019 | 142,37 | C# | 34 | 452,00 | 46,6 | 66,7 | Link |
| 19 Fortuna | 1394,587 | 3,82 | 20.08.2019 | 142,58 | C# | 34 | 452,67 | 49,1 | 66,8 | Link |
| 3834 Zappafrank (1980 JE) | 1488,920 | 4,08 | 25.04.2020 | 133,55 | C | 34 | 449,20 | 35,8 | 62,6 | Link |
| 55555 DNA (2001 YR2) | 1498,886 | 4,10 | 07.01.2020 | 132,66 | C | 34 | 446,21 | 24,3 | 62,2 | Link |
| 5 Astraea | 1508,414 | 4,13 | 26.01.2020 | 131,82 | C | 34 | 443,39 | 13,3 | 61,8 | Link |
| 13 Egeria | 1510,123 | 4,13 | 18.09.2018 | 131,67 | C | 34 | 442,89 | 11,3 | 61,7 | Link |
| 3811 Karma (1953 TH) | 1510,970 | 4,14 | 06.01.2020 | 131,60 | C | 34 | 442,64 | 10,4 | 61,7 | Link |
| 389 Industria (A894 EE) | 1538,610 | 4,21 | 05.01.2020 | 129,23 | C | 34 | 434,69 | -21,0 | 60,6 | Link |
| 33179 Arsenewenger (1998 FY15) | 1543,760 | 4,23 | 08.05.2019 | 128,80 | C | 34 | 433,24 | -26,8 | 60,4 | Link |
| 78 Diana | 1547,939 | 4,24 | 06.01.2020 | 128,46 | C | 34 | 432,07 | -31,5 | 60,2 | Link |
| 407 Arachne (A895 TB) | 1553,509 | 4,25 | 06.01.2020 | 127,99 | C | 34 | 430,52 | -37,7 | 60,0 | Link |
| 4580 Child | 1566,342 | 4,29 | 18.09.2019 | 253,89 | B | 35 | 452,38 | 48,1 | 119,0 | Link |
| 15 Eunomia | 1570,418 | 4,30 | 18.07.2018 | 253,24 | B | 35 | 451,21 | 43,6 | 118,7 | Link |
| 26 Proserpina | 1580,327 | 4,33 | 01.12.2019 | 251,65 | B | 35 | 448,38 | 32,7 | 118,0 | Link |
| 6354 Vangelis (1934 GA) | 1581,299 | 4,33 | 28.04.2020 | 251,49 | B | 35 | 448,11 | 31,6 | 117,9 | Link |
| 4149 Harrison (1984 EZ) | 1589,544 | 4,35 | 16.06.2020 | 250,19 | B | 35 | 445,78 | 22,6 | 117,3 | Link |
| 3 Juno | 1592,014 | 4,36 | 07.01.2020 | 249,80 | B | 35 | 445,09 | 19,9 | 117,1 | Link |
| 97 Klotho | 1592,672 | 4,36 | 07.01.2020 | 249,69 | B | 35 | 444,91 | 19,2 | 117,0 | Link |
| 75 Eurydike | 1597,126 | 4,37 | 04.02.2020 | 249,00 | B | 35 | 443,67 | 14,4 | 116,7 | Link |
| 324 Bamberga | 1603,808 | 4,39 | 17.09.2018 | 247,96 | B | 35 | 441,82 | 7,1 | 116,2 | Link |
| 4738 Jimihendrix | 1604,220 | 4,39 | 04.06.2020 | 247,90 | B | 35 | 441,70 | 6,7 | 116,2 | Link |
| 34 Circe | 1607,896 | 4,40 | 06.12.2019 | 247,33 | B | 35 | 440,69 | 2,7 | 115,9 | Link |
| 103 Hera | 1622,409 | 4,44 | 07.01.2020 | 245,12 | B | 35 | 436,75 | -12,8 | 114,9 | Link |
| 110393 Rammstein (2001 TC8) | 1629,766 | 4,46 | 26.01.2020 | 244,01 | B | 35 | 434,78 | -20,7 | 114,4 | Link |
| 140 Siwa | 1651,816 | 4,52 | 05.01.2020 | 240,75 | B | 35 | 428,98 | -43,9 | 112,9 | Link |
| 342843 Davidbowie (2008 YN3) | 1664,051 | 4,56 | 07.04.2019 | 238,98 | A# | 35 | 451,14 | 43,3 | 112,0 | Link |

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|---------------------------------------|----------|------|------------|---------------|----|----|--------|-------|-------|----------------------|
| 128 Nemesis | 1664,742 | 4,56 | 04.01.2020 | 238,89 | A# | 35 | 450,96 | 42,6 | 112,0 | Link |
| 55 Pandora | 1675,195 | 4,59 | 08.11.2019 | 237,39 | A# | 35 | 448,14 | 31,7 | 111,3 | Link |
| 1 Ceres | 1681,771 | 4,60 | 02.03.2019 | 236,47 | A# | 35 | 446,39 | 25,0 | 110,8 | Link |
| 88 Thisbe | 1683,154 | 4,61 | 21.10.2018 | 236,27 | A# | 35 | 446,02 | 23,5 | 110,8 | Link |
| 2 Pallas | 1687,411 | 4,62 | 09.05.2019 | 235,68 | A# | 35 | 444,90 | 19,2 | 110,5 | Link |
| 658 Asteria (A908 BL) | 1759,670 | 4,82 | 07.01.2020 | 226,00 | A | 35 | 452,00 | 46,6 | 105,9 | Link |
| 81 Terpsichore | 1760,814 | 4,82 | 05.01.2020 | 225,85 | A | 35 | 451,70 | 45,4 | 105,9 | Link |
| 2620 Santana | 1765,964 | 4,83 | 23.04.2020 | 225,19 | A | 35 | 450,39 | 40,4 | 105,6 | Link |
| 33 Polyhymnia | 1779,681 | 4,87 | 05.02.2020 | 223,46 | A | 35 | 446,91 | 27,0 | 104,7 | Link |
| 1100 Arnica (1928 SD) | 1800,964 | 4,93 | 07.01.2020 | 220,82 | A | 35 | 441,63 | 6,4 | 103,5 | Link |
| 1930 Lucifer (1964 UA) | 1803,243 | 4,94 | 27.11.2019 | 220,54 | A | 35 | 441,07 | 4,2 | 103,4 | Link |
| 4305 Clapton (1976 EC) | 1816,394 | 4,97 | 04.01.2020 | 218,94 | A | 35 | 437,88 | -8,4 | 102,6 | Link |
| 16 Psyche | 1825,121 | 5,00 | 03.09.2019 | 217,89 | A | 35 | 435,79 | -16,7 | 102,1 | Link |
| 4749 Ledzeppelin (1989 WE1) | 1905,768 | 5,22 | 04.12.2019 | 208,67 | G# | 35 | 442,16 | 8,5 | 97,8 | Link |
| 4442 Garcia (1985 RB1) | 1906,997 | 5,22 | 17.06.2020 | 208,54 | G# | 35 | 441,88 | 7,4 | 97,8 | Link |
| 2878 Panacea (1980 RX) | 1941,690 | 5,32 | 07.01.2020 | 204,81 | G# | 35 | 433,98 | -23,8 | 96,0 | Link |
| 399 Persephone (A895 DD) | 1945,713 | 5,33 | 14.11.2019 | 204,39 | G# | 35 | 433,08 | -27,4 | 95,8 | Link |
| 292872 Anoushankar (2006 VV12) | 1951,326 | 5,34 | 24.04.2020 | 203,80 | G# | 35 | 431,84 | -32,4 | 95,5 | Link |
| 704 Interamnia (1910 KU) | 1953,931 | 5,35 | 25.02.2018 | 203,53 | G# | 35 | 431,26 | -34,7 | 95,4 | Link |
| 451 Patientia | 1955,104 | 5,35 | 20.10.2018 | 203,41 | G# | 35 | 431,00 | -35,8 | 95,3 | Link |
| 133 Cyrene | 1959,595 | 5,37 | 05.01.2020 | 202,94 | G# | 35 | 430,02 | -39,7 | 95,1 | Link |
| 100 Hekate | 1983,428 | 5,43 | 05.01.2020 | 200,50 | G | 35 | 450,11 | 39,3 | 94,0 | Link |
| 52 Europa | 1988,069 | 5,44 | 07.01.2020 | 200,03 | G | 35 | 449,06 | 35,3 | 93,8 | Link |
| 212 Medea | 2010,379 | 5,50 | 25.10.2019 | 197,81 | G | 35 | 444,08 | 16,0 | 92,7 | Link |
| 120 Lachesis | 2011,603 | 5,51 | 05.01.2020 | 197,69 | G | 35 | 443,81 | 14,9 | 92,7 | Link |
| 24 Themis | 2028,608 | 5,55 | 15.09.2018 | 196,40 | G | 35 | 440,09 | +0,3 | 91,9 | Link |
| 10 Hygiea | 2034,689 | 5,57 | 04.01.2020 | 195,45 | G | 35 | 438,77 | -4,8 | 91,6 | Link |
| 1027 Aesculapia (A923 YO11) | 2045,848 | 5,60 | 04.01.2020 | 194,39 | G | 35 | 436,38 | -14,3 | 91,1 | Link |
| 31 Euphrosyne | 2047,296 | 5,61 | 15.06.2018 | 194,25 | G | 35 | 436,07 | -15,5 | 91,1 | Link |
| 94 Aurora | 2048,401 | 5,61 | 22.10.2018 | 194,14 | G | 35 | 435,84 | -16,5 | 91,0 | Link |
| 511 Davida (1903 LU) | 2056,527 | 5,63 | 16.09.2018 | 193,38 | G | 35 | 434,11 | -23,1 | 90,6 | Link |
| 318 Magdalena | 2085,953 | 5,71 | 06.01.2020 | 190,65 | G | 35 | 427,99 | -47,9 | 89,4 | Link |

OUTER MAIN-BELT ASTEROIDS Asteroids with orbital elements constrained by (3.2 au < a < 4.6 au).

| | | | | | | | | | | |
|------------------------------|----------|------|------------|---------------|----|----|--------|-------|------|----------------------|
| 81948 Eno (2000 OM69) | 2103,617 | 5,76 | 24.01.2019 | 189,05 | F# | 35 | 449,63 | 37,5 | 88,6 | Link |
| 580 Selene | 2117,030 | 5,80 | 31.10.2019 | 187,85 | F# | 35 | 446,78 | 26,5 | 88,1 | Link |
| 65 Cybele | 2316,170 | 6,34 | 18.09.2018 | 171,70 | F | 35 | 432,65 | -29,2 | 80,5 | Link |
| 87 Sylvia | 2373,818 | 6,50 | 08.09.2018 | 167,53 | E | 35 | 447,25 | 28,3 | 78,5 | Link |
| 87 Sylvia I Romulus | 3,654 | | | 212,57 | G# | 26 | 450,42 | 40,5 | 99,6 | Link |
| 87 Sylvia II Remus | 1,373 | | | 141,43 | C# | 24 | 449,01 | 35,1 | 66,3 | Link |
| 107 Camilla | 2382,998 | 6,52 | 22.10.2018 | 166,88 | E | 35 | 445,52 | 21,6 | 78,2 | Link |
| 107 Camilla I | 0,500 | | | 194,18 | G | 23 | 435,92 | -16,1 | 91,0 | |
| 107 Camilla II | 3,722 | | | 208,68 | G# | 26 | 442,19 | 8,6 | 97,8 | Link |

JUPITER TROJAN Asteroids trapped in Jupiter's L4/L5 Lagrange points (4.6 au < a < 5.5 au; e < 0.3).

| | | | | | | | | | | |
|--------------------------------|----------------|--------------|------------|---------------|-----------|-----------|---------------|--------------|--------------|----------------------|
| JUPITER | 4332,59 | 11,86 | | 183,58 | F# | 36 | 436,62 | -13,3 | 86,05 | |
| 588 Achilles (A906 DN) | 4342,894 | 11,89 | 06.01.2020 | 183,14 | F# | 36 | 435,59 | -17,5 | 85,8 | Link |
| 617 Patroclus (A906 UL) | 4350,951 | 11,91 | 14.06.2017 | 182,80 | F# | 36 | 434,78 | -20,7 | 85,7 | Link |
| 617 Patroclus 1 Menoetius | 4,283 | | | 181,35 | F# | 26 | 431,33 | -34,5 | 85,0 | Link |

Solar System

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|-----------------------------------|----------|-------|------------|---------------|----|----|--------|-------|------|----------------------|
| 624 Hektor (A907 CF) | 4405,802 | 12,06 | 22.10.2018 | 180,53 | F# | 36 | 429,37 | -42,4 | 84,6 | Link |
| 624 Hektor 1 Skamandrios | 2,965 | | | 130,98 | C | 25 | 440,56 | 2,2 | 61,4 | Link |
| 4946 Askalaphus (1988 BW1) | 4480,149 | 12,27 | 24.11.2019 | 177,53 | F | 36 | 447,35 | 28,7 | 83,2 | Link |

CENTAUR Objects with orbits between Jupiter and Neptune (5.5 au < a < 30.1 au).

| SATURN | 10759,21 | 29,46 | | 147,85 | D | 37 | 443,04 | 11,9 | 69,3 | |
|-----------------------------------|-----------|--------|------------|---------------|----|----|--------|-------|-------|----------------------|
| 31824 Elatus (1999 UG5) | 14777,395 | 40,46 | 18.04.2009 | 215,29 | A | 38 | 430,58 | -37,4 | 100,9 | Link |
| 2060 Chiron (1977 UB) | 18492,654 | 50,63 | 04.01.2020 | 172,04 | F | 38 | 433,51 | -25,7 | 80,6 | Link |
| 10199 Chariklo (1997 CU26) | 23033,122 | 63,08 | 06.05.2019 | 138,13 | C# | 38 | 438,52 | -5,8 | 64,7 | Link |
| 54598 Bienor (2000 QC243) | 24355,100 | 66,68 | 29.12.2019 | 130,63 | C | 38 | 439,38 | -2,4 | 61,2 | Link |
| 8405 Asbolus (1995 GO) | 27878,235 | 76,33 | 14.09.2018 | 228,24 | A# | 39 | 430,86 | -36,3 | 107,0 | Link |
| URANUS | 30685,930 | 84,01 | | 207,36 | G# | 39 | 439,37 | -2,5 | 97,2 | |
| 83982 Crantor (2002 G09) | 31495,622 | 86,23 | 01.08.2014 | 202,03 | G# | 39 | 428,08 | -47,6 | 94,7 | Link |
| 49036 Pelion (1998 QM107) | | 89,20 | 02.09.2005 | 195,29 | G | 39 | 438,41 | -6,3 | 91,5 | Link |
| 5145 Pholus (1992 AD) | 33594,934 | 91,98 | 19.04.2018 | 189,40 | F# | 39 | 450,47 | 40,7 | 88,8 | Link |
| 330836 Orius (2009 HW77) | 36595,948 | 100,19 | 19.05.2012 | 173,87 | F | 39 | 438,12 | -7,4 | 81,5 | Link |
| 7066 Nessus (1993 HA2) | 44670,414 | 122,30 | 26.05.2004 | 142,44 | C# | 39 | 452,22 | 47,4 | 66,8 | Link |
| 10370 Hylonome (1995 DW2) | 46175,845 | 126,42 | 14.06.2010 | 137,80 | C# | 39 | 437,48 | -9,9 | 64,6 | Link |
| 55576 Amycus (2002 GB10) | 46214,889 | 126,53 | 15.08.2007 | 137,68 | C# | 39 | 437,11 | -11,4 | 64,5 | Link |
| 52975 Cyllarus (1998 TF35) | 48579,781 | 133,00 | 25.09.2008 | 130,98 | C | 39 | 440,56 | 2,2 | 61,4 | Link |
| 385695 (2005 TO74) | 60085,676 | 164,51 | 06.10.2013 | 211,79 | G# | 40 | 448,78 | 34,2 | 99,3 | Link |
| NEPTUN | 60187,640 | 164,78 | | 211,44 | G# | 40 | 448,02 | 31,3 | 99,1 | |
| 385571 Otrera (2004 UP10) | 60420,650 | 165,42 | 06.10.2013 | 210,62 | G# | 40 | 446,29 | 24,6 | 98,7 | Link |

TRANS-NEPTUNIAN OBJECTS with orbits outside Neptune (a > 30.1 au).

| 38083 Rhadamanthus (1999 HX11) | 89029,125 | 243,75 | 07.06.2008 | 142,94 | C# | 40 | 428,34 | -46,5 | 67,0 | Link |
|--|------------|--------|------------|---------------|----|----|--------|-------|-------|----------------------|
| 47171 Lempo | 89870,255 | 246,05 | 28.10.2017 | 141,60 | C# | 40 | 449,56 | 37,2 | 66,4 | Link |
| 47171 Lempo I (Paha) | 50,300 | | | 247,07 | B | 30 | 440,23 | 0,9 | 115,8 | |
| 47171 Lempo II (Hiisi) | 1,907 | | | 203,65 | G# | 25 | 431,52 | -33,7 | 95,5 | Link |
| 90482 Orcus (2004 DW) | 89556,926 | 245,19 | 04.01.2020 | 142,10 | C# | 40 | 451,13 | 43,3 | 66,6 | Link |
| PLUTO | 90487,277 | 247,74 | | 140,65 | C# | 40 | 445,26 | 20,6 | 65,7 | Link |
| 28978 Ixion (2001 KX76) | 91769,411 | 251,25 | 20.06.2018 | 138,67 | C# | 40 | 440,26 | 1,0 | 65,0 | Link |
| 307261 (2002 MS4) | 99575,306 | 272,62 | 14.06.2018 | 127,80 | C | 40 | 429,87 | -40,3 | 59,6 | Link |
| 120347 Salacia (2004 SB60) | 100072,934 | 273,98 | 21.09.2019 | 127,17 | C | 40 | 427,73 | -49,0 | 59,9 | Link |
| 420356 Praamzius (2012 BX85) | 101162,626 | 276,97 | 30.01.2016 | 251,59 | B | 41 | 448,29 | 32,3 | 117,9 | Link |
| 20000 Varuna (2000 WR106) | 101980,237 | 279,21 | 22.05.2019 | 249,57 | B | 41 | 444,69 | 18,4 | 117,0 | Link |
| 136108 Haumea (2003 EL61) | 103647,163 | 283,77 | 26.08.2019 | 245,56 | B | 41 | 437,54 | -9,7 | 115,1 | Link |
| 50000 Quaoar (2002 LM60) | 105494,678 | 288,83 | 31.08.2019 | 241,26 | B | 41 | 429,88 | -40,3 | 113,1 | Link |
| 385446 Manwe (2003 QW111) | 106202,356 | 290,77 | 26.10.2019 | 239,65 | A# | 41 | 452,40 | 48,1 | 112,3 | Link |
| 148780 Altjira (2001 UQ18) | 106847,940 | 292,53 | 26.10.2019 | 238,20 | A# | 41 | 449,67 | 37,6 | 111,7 | Link |
| 88611 Teharonhiawako (2001 QT297) | 107577,118 | 294,53 | 26.10.2019 | 236,59 | A# | 41 | 446,62 | 25,9 | 110,9 | Link |
| 53311 Deucalion (1999 HU11) | 107688,173 | 294,83 | 25.04.2014 | 236,35 | A# | 41 | 446,16 | 24,1 | 110,8 | Link |
| 486958 Arrokoth (2014 MU69) | 109062,365 | 298,60 | 22.10.2014 | 233,37 | A# | 41 | 440,54 | 2,1 | 109,4 | Link |
| 58534 Logos (1997 CQ29) | 110683,376 | 303,03 | 18.05.2012 | 229,95 | A# | 41 | 434,09 | -23,4 | 107,8 | Link |
| 136472 Makemake (2005 FY9) | 111844,724 | 306,21 | 12.05.2019 | 227,56 | A# | 41 | 429,58 | -41,5 | 106,7 | Link |
| 174567 Varda (2003 MW12) | 114365,640 | 313,12 | 04.05.2019 | 222,55 | A | 41 | 445,09 | 19,9 | 104,3 | Link |
| 84522 (2002 TC302) | 149253,956 | 408,64 | 31.10.2019 | 170,53 | F | 41 | 429,70 | -41,0 | 79,9 | Link |
| 225088 (2007 OR10) | 202427,474 | 554,22 | 20.09.2015 | 251,46 | B | 42 | 448,06 | 31,4 | 117,9 | Link |
| 136199 Eris (2003 UB313) | 204199,413 | 559,07 | 03.12.2019 | 249,28 | B | 42 | 444,17 | 16,3 | 116,9 | Link |

Solar System

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|-------------------------|-------------|----------|------------|--------|----|----|--------|-----|------|----------------------|
| 90377 Sedna (2003 VB12) | 3903673,419 | 10687,68 | 07.12.2018 | 208,64 | G# | 46 | 442,09 | 8,2 | 97,8 | Link |
|-------------------------|-------------|----------|------------|--------|----|----|--------|-----|------|----------------------|

Please note:

When the NASA get more detailed informations of a distant space object they may improve the orbit determination. Logically, a slightly altered orbital period leads to a slightly altered audio frequency.

Tuning Forks



Tuning forks with the octave frequencies of the minor planets are available as custom-made products from Planetware.

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