

HARMONIC INTERVALS FOR MAJOR SCALES

ASCENDING AND DESCENDING SERIES

LIGHT COMPARED TO SOUND

| Number Of Proportions | | | Music Interval Harmonic | Key Note | Color | | Human Color Response | | | Natural Pitch | | | | | | Concert Pitch | | | | |
|-----------------------|---|---|-----------------------------|----------|-------------------------------------------------|----------------|------------------------------|-------------|------------------|---------------------------|-------------|--------------------|------------------------|-------------|--------------------|-----------------------|-------------|--------------------|----------------------|--|
| | | | | | Light Refract | Pigment Absorb | Direct Observation Testing** | | | Just Intonation | | | Pythagorean - Diatonic | | | Equal Temp.-Chromatic | | | | |
| | | | | | | | Light Freq.* | Sound Freq. | 1st Octave Ratio | Freq. Ratio | Mid C Freq. | Light* 1/5th Shift | Freq. Ratio | Mid C Freq. | Light* 1/5th Shift | Freq. Ratio | Mid C Freq. | Light* 1/5th Shift | | |
| | | | | | UltraViolet Octave | 1/5th Shift | Whole Numbers | | | Asc. & Desc. Perfect 5ths | | | Equally Spaced Notes | | | | | | | |
| 14 | 9 | 5 | Infinite 9ths | | White | Black | 9.69E+14 | 573.91 | 2.24E+00 | 2.25 | 576.00 | 97804639846 | 2.25 | 576.00 | 94997804639 | 2.295 | 600.44085 | 99028762701 | | |
| | | | <i>The Great Diesis</i> | ---- | <i>The Natural Octave Exceeds Double</i> | | | | | | 2.13332 | 546.14 | 9007309205 | 2.0272 | 518.96 | 8559038315 | 2.04 | 533.7252 | 88025559515 | |
| 13 | 8 | 4 | Octave +1 | C | Red | Green | 8.62E+14 | 510.14 | 1.992734 | 2 | 512.00 | 42493013196 | 2 | 512.00 | 84442493013 | 2.04 | 533.7252 | 88025559515 | | |
| 12 | 7 | | Major Seventh | B | Magenta | Lime | 7.99E+14 | 486.22 | 1.8992969 | 1.875 | 480.00 | 79164837199 | 1.8984 | 485.99 | 80152748397 | 1.887749 | 493.8917708 | 81455961740 | | |
| 11 | | | Minor Seventh | Bb | Violet | Yellow | 7.14E+14 | 464.48 | 1.8143751 | 1.8 | 460.80 | 7599824371 | 1.7777 | 455.09 | 7505651200 | 1.781797 | 466.1715491 | 76884155817 | | |
| 10 | 6 | | Major Sixth | A | Indigo | Gold | 6.72E+14 | 455.75 | 1.7802734 | 1.66666 | 426.66 | 7036846270 | 1.6875 | 432.00 | 71248353479 | 1.681793 | 440.0075025 | 72569004810 | | |
| 9 | | | Minor Sixth | Ab | Blue | Orange | 6.35E+14 | 447.38 | 1.7475781 | 1.6 | 409.60 | 6755399441 | 1.5802 | 404.53 | 66717815817 | 1.587401 | 415.3117236 | 68496010392 | | |
| 8 | 5 | 3 | Perfect Fifth | G | Turquoise | Red-Org. | 5.95E+14 | 417.73 | 1.6317578 | 1.5 | 384.00 | 6333186975 | 1.5 | 384.00 | 6333186975 | 1.498307 | 392.0020604 | 64651623529 | | |
| 7 | | | Tritone | F# | Green | Red | 5.61E+14 | 391.72 | 1.5301563 | 1.40625 | 360.00 | 5937362789 | 1.4238 | 364.49 | 6011414898 | 1.414214 | 370.0008088 | 61023028737 | | |
| 6 | 4 | | Perfect Fourth | F | Lime | Magenta | 5.35E+14 | 363.53 | 1.4200391 | 1.33333 | 341.33 | 5629485460 | 1.3333 | 341.33 | 5629444558 | 1.33484 | 349.2341892 | 57598057776 | | |
| 5 | 3 | 2 | Major Third | E | Yellow | Violet | 5.11E+14 | 324.6 | 1.2679688 | 1.25 | 320.00 | 5277655813 | 1.2656 | 323.99 | 5343461584 | 1.259921 | 329.6331312 | 54365319103 | | |
| 4 | | | Minor Third | Eb | Gold | Indigo | 5.01E+14 | 305.5 | 1.1933594 | 1.2 | 307.20 | 5066549580 | 1.1851 | 303.39 | 5003712491 | 1.189207 | 311.1322274 | 51314025271 | | |
| 3 | 2 | | Major Second | D | Orange | Blue | 4.92E+14 | 288.54 | 1.1271094 | 1.125 | 288.00 | 4749890231 | 1.125 | 288.00 | 4749890231 | 1.122462 | 293.6697330 | 48433992933 | | |
| 2 | | | Minor Second | C# | Red-Org | Turquoise | 4.59E+14 | 270.76 | 1.0676563 | 1.06667 | 273.07 | 4503613701 | 1.0534 | 269.67 | 4447579509 | 1.059463 | 277.1873046 | 45715599686 | | |
| | | | Ascending Harmonics | | White Light Octave | | | | | | | | | | | | | | Mistuned 3rds & 6ths | |
| 1 | 1 | 1 | Fundamental | C | Red | Green | 4.31E+14 | 255.07 | 0.9963672 | 1 | 256.00 | 4.22E+14 | 1 | 256.00 | 4222124650 | 1.02 | 261.63 | 43149784076 | | |
| | | | Descending Harmonics | | InfraRed Octave | | | | | | | | | | | | | | | |
| 2 | | | Minor Second | B | Magenta | Lime | 4.00E+14 | 243.11 | 0.94965 | 0.9375 | 240.00 | 3.96E+14 | 0.9492 | 242.9952 | 4.01E+14 | 0.9438745 | 246.9458854 | 4.07E+14 | | |
| 3 | 2 | | Major Second | Bb | Violet | Yellow | 3.57E+14 | 232.24 | 0.59219 | 0.9 | 230.40 | 3.80E+14 | 0.8889 | 227.5456 | 3.75E+14 | 0.8908985 | 233.0857745 | 3.84E+14 | | |
| 4 | | | Minor Third | A | Indigo | Gold | 3.36E+14 | 227.875 | 0.890135 | 0.83333 | 213.33 | 3.52E+14 | 0.8438 | 216 | 3.56E+14 | 0.8408965 | 220.0037512 | 3.63E+14 | | |
| 5 | 3 | 2 | Major Third | Ab | Blue | Orange | 3.17E+14 | 223.69 | 0.87379 | 0.8 | 204.80 | 3.38E+14 | 0.7901 | 202.2656 | 3.34E+14 | 0.7937005 | 207.6558618 | 3.42E+14 | | |
| 6 | 4 | | Perfect Fourth | G | Turquoise | Red-Org. | 2.98E+14 | 208.865 | 0.81588 | 0.75 | 192.00 | 3.17E+14 | 0.7500 | 192 | 3.17E+14 | 0.7491535 | 196.0010302 | 3.23E+14 | | |
| 7 | | | Tritone | F# | Green | Red | 2.80E+14 | 195.86 | 0.76508 | 0.703125 | 180.00 | 2.97E+14 | 0.7119 | 182.2464 | 3.01E+14 | 0.707107 | 185.0004044 | 3.05E+14 | | |
| 8 | 5 | 3 | Perfect Fifth | F | Lime | Magenta | 2.67E+14 | 181.765 | 0.71002 | 0.666665 | 170.67 | 2.81E+14 | 0.6667 | 170.6624 | 2.81E+14 | 0.66742 | 174.6170946 | 2.88E+14 | | |
| 9 | | | Minor Sixth | E | Yellow | Violet | 2.55E+14 | 162.3 | 0.633985 | 0.625 | 160.00 | 2.64E+14 | 0.6328 | 161.9968 | 2.67E+14 | 0.6299605 | 164.8165656 | 2.72E+14 | | |
| 10 | 6 | | Major Sixth | Eb | Gold | Indigo | 2.51E+14 | 152.75 | 0.59668 | 0.6 | 153.60 | 2.53E+14 | 0.5926 | 151.6928 | 2.50E+14 | 0.5946035 | 155.5661137 | 2.57E+14 | | |
| 11 | | | Minor Seventh | D | Orange | Blue | 2.46E+14 | 144.27 | 0.563555 | 0.5625 | 144.00 | 2.37E+14 | 0.5625 | 144 | 2.37E+14 | 0.561231 | 146.8348665 | 2.42E+14 | | |
| 12 | 7 | | Major Seventh | C# | Red-Org | Turquoise | 2.30E+14 | 135.38 | 0.53383 | 0.533335 | 136.53 | 2.25E+14 | 0.5267 | 134.8352 | 2.22E+14 | 0.5297315 | 138.5936523 | 2.29E+14 | | |
| 13 | 8 | 4 | Octave -2 | C | Red | Green | 2.15E+14 | 127.535 | 0.4981836 | 0.5 | 128.00 | 2.11E+14 | 0.5000 | 128 | 2.11E+14 | 0.51 | 133.43 | 2.16E+14 | | |
| | | | <i>The Great Diesis</i> | ---- | <i>The Natural Octave Falls Short of Double</i> | | | | | | 0.51 | 130.56 | 2.22E+14 | 0.5267 | 134.8352 | 2.22E+14 | 0.53 | 138.59 | 2.29E+14 | |
| 14 | 9 | 5 | Infinite Ninths | B | Black | White | 1.91E+14 | 113.36 | 4.43E-01 | 0.44 | 113.78 | 1.88E+14 | 0.4444 | 113.7777 | 1.88E+14 | 0.45 | 118.61 | 1.96E+14 | | |

* NOTE: All Light Frequencies (Traverse waves) were derived by multiplying the associated Sound Frequency (Longitudinal waves) By 1.5 (1/5th) to adjust for mode switch

** NOTE: Actual Observable Light Frequencies came from Von Nostranos Encyclopedia