

The Musical Wave of Time

Precise Temperament Tuning 24-note for 432 Hz and 528 Hz

Calculated by Robert E Grant in may 2023 | Documented and implemented by Toni Mazzotti

[Link to 24-PTT at 432 Hz and 528 Hz](#) | [Link to 24-PTT at 432 Hz and 528 Hz Isomorphic](#) | [Link to 12-PTT at 432 Hz](#) | [Link to 12-PTT at 528 Hz](#)

Octave	Chakra	Day	Color	MIDI	Frequency	Quarter-tone	Time	Cents	Ratio	Remap				
1	Pineal	Saturday	Purple	0	58.940 Hz	A#*	9 PM	-3448.790	0.136					
		Crown	Sunday	Violet	1	60.761 Hz	B	10 PM	-3396.090	0.141				
		Root	Monday	Red	2	62.382 Hz	B*	11 PM	-3350.530	0.144				
	2	Sacral	Tuesday	Orange	3	64.310 Hz	C	12 AM	-3297.828	0.149				
			Solar	Wednesday	Yellow	4	66.012 Hz	C*	1 AM	-3252.593	0.153			
			Heart	Thursday	Green	5	68.053 Hz	C#	2 AM	-3199.892	0.157			
		3	Throat	Friday	Blue	6	70.166 Hz	C#*	3 AM	-3146.945	0.162			
				Pineal	Saturday	Purple	7	72.013 Hz	D	4 AM	-3101.956	0.167		
				Crown	Sunday	Violet	8	74.264 Hz	D*	5 AM	-3048.684	0.172		
			4	Root	Monday	Red	9	76.368 Hz	D#	6 AM	-3000.326	0.177		
					Sacral	Tuesday	Orange	10	78.586 Hz	D#*	7 AM	-2950.748	0.182	
					Solar	Wednesday	Yellow	11	81.030 Hz	E	8 AM	-2897.721	0.188	
5				Heart	Thursday	Green	12	83.531 Hz	E*	9 AM	-2845.098	0.193		
					Throat	Friday	Blue	13	85.746 Hz	F	10 AM	-2799.784	0.198	
					Pineal	Saturday	Purple	14	88.409 Hz	F*	11 AM	-2746.838	0.205	
	6			Crown	Sunday	Violet	15	90.720 Hz	F#	12 PM	-2702.172	0.210		
					Root	Monday	Red	16	93.573 Hz	F#*	1 PM	-2648.575	0.217	
					Sacral	Tuesday	Orange	17	96.465 Hz	G	2 PM	-2595.875	0.223	
		7		Solar	Wednesday	Yellow	18	99.073 Hz	G*	3 PM	-2549.695	0.229		
					Heart	Thursday	Green	19	102.079 Hz	G#	4 PM	-2497.938	0.236	
					Throat	Friday	Blue	20	105.249 Hz	G#*	5 PM	-2444.990	0.244	
			8	Pineal	Saturday	Purple	21	108.020 Hz	A	6 PM	-2400.000	0.250		
					Crown	Sunday	Violet	22	111.375 Hz	A*	7 PM	-2347.052	0.258	
					Root	Monday	Red	23	114.307 Hz	A#	8 PM	-2302.067	0.265	
9				Crown	Sunday	Violet	24	117.879 Hz	A#*	9 PM	-2248.790	0.273		
					Root	Monday	Red	25	121.523 Hz	B	10 PM	-2196.090	0.281	
					Sacral	Tuesday	Orange	26	124.763 Hz	B*	11 PM	-2150.530	0.289	
	10			Throat	Friday	Blue	27	128.620 Hz	C	12 AM	-2097.828	0.298		
					Pineal	Saturday	Purple	28	132.025 Hz	C*	1 AM	-2052.593	0.306	
					Crown	Sunday	Violet	29	136.106 Hz	C#	2 AM	-1999.892	0.315	
		11		Root	Monday	Red	30	140.332 Hz	C#*	3 AM	-1946.945	0.325		
					Sacral	Tuesday	Orange	31	144.027 Hz	D	4 AM	-1901.956	0.333	
					Solar	Wednesday	Yellow	32	148.528 Hz	D*	5 AM	-1848.684	0.344	
			12	Heart	Thursday	Green	33	152.735 Hz	D#	6 AM	-1800.326	0.353		
					Throat	Friday	Blue	34	157.172 Hz	D#*	7 AM	-1750.748	0.364	
					Pineal	Saturday	Purple	35	162.061 Hz	E	8 AM	-1697.721	0.375	
13				Crown	Sunday	Violet	36	167.062 Hz	E*	9 AM	-1645.098	0.387		
					Root	Monday	Red	37	171.493 Hz	F	10 AM	-1599.784	0.397	
					Sacral	Tuesday	Orange	38	176.819 Hz	F*	11 AM	-1546.838	0.409	
	14			Solar	Wednesday	Yellow	39	181.440 Hz	F#	12 PM	-1502.172	0.420		
					Heart	Thursday	Green	40	187.145 Hz	F#*	1 PM	-1448.575	0.433	
					Throat	Friday	Blue	41	192.929 Hz	G	2 PM	-1395.875	0.447	
		15		Pineal	Saturday	Purple	42	198.145 Hz	G*	3 PM	-1349.695	0.459		
					Crown	Sunday	Violet	43	204.159 Hz	G#	4 PM	-1297.938	0.472	
					Root	Monday	Red	44	210.499 Hz	G#*	5 PM	-1244.990	0.487	
			16	Sacral	Tuesday	Orange	45	216.041 Hz	A	6 PM	-1200.000	0.500		
					Solar	Wednesday	Yellow	46	222.750 Hz	A*	7 PM	-1147.052	0.516	
					Heart	Thursday	Green	47	228.614 Hz	A#	8 PM	-1102.067	0.529	
17				Throat	Friday	Blue	48	235.759 Hz	A#*	9 PM	-1048.790	0.546		
					Pineal	Saturday	Purple	49	243.046 Hz	B	10 PM	-996.090	0.562	
					Crown	Sunday	Violet	50	249.527 Hz	B*	11 PM	-950.530	0.577	
	18			Root	Monday	Red	51	257.240 Hz	C	12 AM	-897.828	0.595		
					Sacral	Tuesday	Orange	52	264.049 Hz	C*	1 AM	-852.593	0.611	
					Solar	Wednesday	Yellow	53	272.211 Hz	C#	2 AM	-799.892	0.630	
		19		Heart	Thursday	Green	54	280.665 Hz	C#*	3 AM	-746.945	0.650		
					Throat	Friday	Blue	55	288.054 Hz	D	4 AM	-701.956	0.667	
					Pineal	Saturday	Purple	56	297.056 Hz	D*	5 AM	-648.684	0.687	
			20	Crown	Sunday	Violet	57	305.470 Hz	D#	6 AM	-600.326	0.707		
					Root	Monday	Red	58	314.344 Hz	D#*	7 AM	-550.748	0.728	
					Sacral	Tuesday	Orange	59	324.122 Hz	E	8 AM	-497.721	0.750	
21				Solar	Wednesday	Yellow	60	334.125 Hz	E*	9 AM	-445.098	0.773		
					Heart	Thursday	Green	61	342.986 Hz	F	10 AM	-399.784	0.794	
					Throat	Friday	Blue	62	353.637 Hz	F*	11 AM	-346.838	0.818	
	22			Pineal	Saturday	Purple	63	362.890 Hz	F#	12 PM	-302.172	0.840		
					Crown	Sunday	Violet	64	374.280 Hz	F#*	1 PM	-248.575	0.866	
					Root	Monday	Red	65	385.859 Hz	G	2 PM	-195.875	0.893	
		23		Sacral	Tuesday	Orange	66	396.290 Hz	G*	3 PM	-149.695	0.917		
					Solar	Wednesday	Yellow	67	408.316 Hz	G#	4 PM	-97.938	0.945	
					Heart	Thursday	Green	68	420.997 Hz	G#*	5 PM	-44.990	0.974	
			24	Throat	Friday	Blue	69	432.081 Hz	A	6 PM	0.000	1.000		
					Pineal	Saturday	Purple	70	445.500 Hz	A*	7 PM	52.948	1.031	
					Crown	Sunday	Violet	71	457.228 Hz	A#	8 PM	97.933	1.058	
25				Root	Monday	Red	72	471.517 Hz	A#*	9 PM	151.210	1.091		
					Sacral	Tuesday	Orange	73	486.091 Hz	B	10 PM	203.910	1.125	
					Solar	Wednesday	Yellow	74	499.053 Hz	B*	11 PM	249.470	1.155	
	26			Heart	Thursday	Green	75	514.479 Hz	C	12 AM	302.172	1.191		
					Throat	Friday	Blue	76	528.099 Hz	C*	1 AM	347.407	1.222	
					Pineal	Saturday	Purple	77	544.422 Hz	C#	2 AM	400.108	1.260	
		27		Crown	Sunday	Violet	78	561.330 Hz	C#*	3 AM	453.055	1.299		
					Root	Monday	Red	79	576.108 Hz	D	4 AM	498.044	1.333	
					Sacral	Tuesday	Orange	80	594.111 Hz	D*	5 AM	551.316	1.375	
			28	Solar	Wednesday	Yellow	81	610.940 Hz	D#	6 AM	599.674	1.414		
					Heart	Thursday	Green	82	628.689 Hz	D#*	7 AM	649.252	1.455	
					Throat	Friday	Blue	83	648.243 Hz	E	8 AM	702.279	1.500	
29				Pineal	Saturday	Purple	84	668.250 Hz	E*	9 AM	754.902	1.547		
					Crown	Sunday	Violet	85	685.972 Hz	F	10 AM	800.216	1.588	
					Root	Monday	Red	86	707.275 Hz	F*	11 AM	853.162	1.637	
	30			Sacral	Tuesday	Orange	87	725.760 Hz	F#	12 PM	897.828	1.680		
					Solar	Wednesday	Yellow	88	748.580 Hz	F#*	1 PM	951.425	1.732	
					Heart	Thursday	Green	89	771.718 Hz	G	2 PM	1004.125	1.786	
		31		Throat	Friday	Blue	90	792.580 Hz	G*	3 PM	1050.305	1.834		
					Pineal	Saturday	Purple	91	816.633 Hz	G#	4 PM	1102.062	1.890	
					Crown	Sunday	Violet	92	841.995 Hz	G#*	5 PM	1155.010	1.949	
			32	Root	Monday	Red	93	864.162 Hz	A	6 PM	1200.000	2.000		
					Sacral	Tuesday	Orange	94	891.000 Hz	A*	7 PM	1252.948	2.062	
					Solar	Wednesday	Yellow	95	914.456 Hz	A#	8 PM	1297.933	2.116	
33				Heart	Thursday	Green	96	943.035 Hz	A#*	9 PM	1351.210	2.183		
					Throat	Friday	Blue	97	972.183 Hz	B	10 PM	1403.910	2.250	
					Pineal	Saturday	Purple	98	998.107 Hz	B*	11 PM	1449.470	2.310	
	34			Crown	Sunday	Violet	99	1028.958 Hz	C	12 AM	1502.172	2.381		
					Root	Monday	Red	100	1056.198 Hz	C*	1 AM	1547.407	2.444	
					Sacral	Tuesday	Orange	101	1088.844 Hz	C#	2 AM	1600.108	2.520	
		35		Solar	Wednesday	Yellow	102	1122.659 Hz	C#*	3 AM	1653.055	2.598		
					Heart	Thursday	Green	103	1152.216 Hz	D	4 AM	1698.044	2.667	
					Throat	Friday	Blue	104	1188.222 Hz	D*	5 AM	1751.316	2.750	
			36	Pineal	Saturday	Purple	105	1221.880 Hz	D#	6 AM	1799.674	2.828		
					Crown	Sunday	Violet	106	1257.377 Hz	D#*	7 AM	1849.252	2.910	
					Root	Monday	Red	107	1296.486 Hz	E	8 AM	1902.279	3.001	
37				Sacral	Tuesday	Orange	108	1336.500 Hz	E*	9 AM	1954.902	3.093		
					Solar	Wednesday	Yellow	109	1371.944 Hz	F	10 AM	2000.216	3.175	
					Heart	Thursday	Green	110	1414.550 Hz	F*	11 AM	2053.162	3.274	
	38			Throat	Friday	Blue	111	1451.520 Hz	F#	12 PM	2097.828	3.359		
					Pineal	Saturday	Purple	112	1497.160 Hz	F#*	1 PM	2151.425	3.465	
					Crown	Sunday	Violet	113	1543.436 Hz	G	2 PM	2204.125	3.572	
		39		Root	Monday	Red	114	1585.160 Hz	G*	3 PM	2250.305	3.669		
					Sacral	Tuesday	Orange	115	1633.266 Hz	G#	4 PM	2302.062	3.780	
					Solar	Wednesday	Yellow	116	1683.989 Hz	G#*	5 PM	2355.010	3.897	
			40	Heart	Thursday	Green	95	1728.325 Hz	A	6 PM	2400.000	4.000		
					Throat	Friday	Blue	118	1782.001 Hz	A*	7 PM	2452.948	4.124	
					Pineal	Saturday	Purple	119	1828.912 Hz	A#	8 PM	2497.933	4.233	
41				Crown	Sunday	Violet	120	1886.069 Hz	A#*	9 PM	2551.210	4.365		
					Root	Monday	Red	121	1944.366 Hz	B	10 PM	2603.910	4.500	
					Sacral	Tuesday	Orange	122	1996.214 Hz	B*	11 PM	2649.470	4.620	
	42			Solar	Wednesday	Yellow	123	2057.917 Hz	C	12 AM	2702.172	4.763		
					Heart	Thursday	Green	124	2112.396 Hz	C*	1 AM	2747.407	4.899	
					Throat	Friday	Blue	125	2177.689 Hz	C#	2 AM	2800.108	5.040	
		43		Pineal	Saturday	Purple	126	2245.319 Hz	C#*	3 AM	2853.055	5.197		
					Crown	Sunday	Violet	127	2304.432 Hz	D	4 AM	2898.044	5.333	
					Root	Monday	Red	128	2304.432 Hz	D	4 AM	2898.044	5.333	

The PURPLE and RED edges above represent each note on the interlaced 432 Hz and 528 Hz scales.

This 24-note scale is an expansion of the 12-note scale, and therefore, it maintains full compatibility with Western harmony. Just expanding it to quarter-tones.

The thin and almost transparent diagonal lines, which begin at the central octave, illustrate the expansion of the scale from 12 to 24 notes, listed in the REMAP column.

The 24-note scale does not obey the traditional piano layout. Its 24 notes per octave result in 24 keys distributed in two octaves of the keyboard.

The use of 24 quarter-tones per octave makes it difficult to perform using a conventional keyboard. But it opens up new possibilities for musical programming, since it allows intervals, harmonies, modulations and transpositions that are impossible on 12-tone scales.

This 24-note scale has twice as many degrees per octave and this reduces the covered number to just over 5 octaves. A grand piano has 88 notes and the MIDI protocol allows up to 128 notes, that is, from the midpoint at 432.081 Hz, we reached the lowest note in E2 = 58.940 Hz, and in the highest note in B6 = 2304.432 Hz. In some software it is possible to move this range up or down. This limitation can be overcome using the two 12-tone scales. There is one disadvantage and some advantages with this approach. See more.

In the header of this table, see 4 web links to 2 versions of 24 notes, in normal layout and in isomorphic layout, and also the links of the 2 12-tone scales, at 432 Hz and 528 Hz. In these 12-tone links it is possible to know