MUSICAL COLORS

So who is part of the Musical Colors family tree timeline?

The Sumerians, Egyptians & East Indians - These ancient **B.C.** civilizations of the world were crowned with most of all the known "firsts" in human understanding of the natural and man made worlds. They all had some type of syneasthetic correlation system and or knowledge of the connection between **MUSIC** and **COLOR**. Being that as it may, this knowledge is mostly fragmented and rather elusive, do to the nature of these very ancient records, most of which are on clay tablets.

The Chinese - In ancient **China B.C.**, one of the many schemes relating matters such as the seasons, body parts, facial features and planets, contained the following relationships between musical tones and colors:

Tone	Color
Yú	**Black**
Jué	**Green-Blue**
Zhiv	**Red**
go-ng	**Yellow**
sha-ng	**White**

The Persians - In ancient **Persia B.C.**, an old scheme provided the following system of correspondences between musical notes and colors:

Note	Color
B	**Rose**
A	**Green**
G	**Bright Blue**
F	**Black**
E	**Yellow**
D	**Violet**

C	**Blue-Black**

The Greeks - Around the year **550 B.C.**, **Pythagoras** presented mathematical equations for musical scales, showing that musical notes could be seen as relationships between numbers. A musical scale, for example, would be divided into eight notes, or an "Octave" scale, which would repeat its sequence as notes proceeded up and down the scale. To use the simplest example, this could be the **C** Major scale, which consist of the seven so-called "natural" notes: **C, D, E, F, G, A, B** & **C**.

Around **370 B.C.**, **Plato** wrote *Timaeus*, in which he described the "Soul of the World" as having these same musical ratios. A cosmology soon evolved in which the known planets' radii were given a ratio sequence of **1:2:3:4:8:9**. This sequence came close to the Greek diatonic musical scale's ratios and so the known planets were linked to music. Plato pondered the idea of eight concentric circles, each with its own color and tone. The eighth note was a repetition of the first note and all the notes sounding together produced what he called the "Music of the Spheres". Around **350 B.C.**, **Aristotle** wrote to support that the harmony of colors were like the harmony of sounds. As Aristotle's works began to be translated and incorporated into the European sciences, this led to the eventual relating of specific sound and light frequencies. He suggested one of the first **MUSIC COLOR** formulas. He had no concept of the natural color spectrum so he arbitrarily chose **Black** (which is actually not a color but theoretically the absence of color) and White (which is actually not a color either but theoretically the presence of all colors) at the ends and several known colors in the middle. Aristotle also assigned colors to musical tones according to how these tones and colors mixed together:

Interval	Color
Double-Octave	**Black**
Twelfth	**Violet**
Eleventh	**Blue**
Octave	**Green**
Fifth	**Red**
Fourth	**Yellow**
Base	**White**

At about this same time, **Archytas** of Tarentus introduced the idea of the "Chromatic" scale to Greece, adding five half tones to the existing seven "natural" tones. This idea was eventually seen as a compliment to the two main types of seven natural tone scales at that time, these being primarily the major and minor modes of natural note scales, which later lead to the Church Modes. The five new half tones, termed chromatic notes (which was a term used to describe both music and color), were seen as having a mixture or combination of the music and color elements of both natural notes directly above and below each half note. This later became known as "enharmonic spelling". During the time between **350 B.C.** and **1000 A.D.**, the pre-age scientific

knowledge, handed down by these great philosophers, had survived mainly due to knowledge recorded and handed down by **Socrates**, his scribes, his successors and other like-minded individuals. A brief overview of this knowledge, as it has evolved through the science of numerology, and music theory in general, is as follows: If we hypothetically take three numbers, which we can call **1**, **2**, and **3**, and we observe that the absolute number of different combinations of these three numbers is seven combinations, the following numerical chart becomes true:

Combination 1	**1, 2** & **3** or **2**, **3** & **1** or **3**, **1** & **2** etc.
Combination 2	**1**
Combination 3	**1** & **2** or **2** & **1**
Combination 4	**2**
Combination 5	**2** & **3** or **3** & **2**
Combination 6	**3**
Combination 7	**3** & **1** or **1** & **3**

One way the connection between **COLOR** and the above chart can be seen, is in the fact that there are three primary colors in the color spectrum, plus four more secondary colors that are created from the combinations of the three primary colors. These seven natural colors are either one of the primary colors, or a resultant mixture of two or three of the primary colors. Notice that the three primary colors cannot be recreated by mixing any other colors, so they are quite unique. The three primary colors are **Red**, **Yellow**, and **Blue** while the secondary colors are **Brown** **Orange**, **Green** and **Violet**; these being the four colors that are created by mixing, in equal portions, the three primary colors according to the chart provided bellow:

Color	Number	Primary Colors
Brown	**1, 2** & **3**	**Red**, **Yellow** & **Blue**
Red	**1**	**Red**
Orange	**1** & **2**	**Red** & **Yellow**
Yellow	**2**	**Yellow**
Green	**2** & **3**	**Yellow** & **Blue**
Blue	**3**	**Blue**
Violet	**3** & **1**	**Blue** & **Red**

We can see that theoretically, **COLOR** can be based on the relationships between the numbers three and seven. Likewise, there are also three primary tones in **MUSIC** and four secondary tones, all known as the seven "natural" notes in music. The four secondary notes are the harmonic resolution of the synthesis, or simultaneous occurrence, of the combination of two or three of the primary notes.

Note Resolution	Number	Primary Note Synthesis
B	**1, 2** & **3**	**C**, **E** & **G** resonate upward to **B**
C	**1**	**C**
D	**1** & **2**	**C** & **E** resonate inward to **D**
E	**2**	**E**
F	**2** & **3**	**E** & **G** resonate inward to **F**
G	**3**	**G**
A	**3** & **1**	**G** & **C** resonate downward to **A**

The three notes that correspond to the primary colors can be seen as **C**, **E** and **G** (a Major triad), which is the most important chord in music and the groundwork for the major scale occurring within the natural phenomena known as the "Harmonic Series". It is important to realize that these correspondences, between the colors of the spectrum and the notes of the musical scale (being based on the same principals of nature), have been adapted in some form or another by most cultures worldwide and can be seen as being coded with any type of color configuration. The scientific knowledge of this time was given to understanding the nature of the five remaining half tones, which lay between **C** & **D**, **D** & **E**, **F** & **G**, **G** & **A** and **A** & **B**, as wavelength nodes, or half way marks, in a twelve-tone system of equal proportions. Relating the natural notes to the known colors was of coarse, a natural thing to do; and as stated earlier, the five half notes were understood to contain elements of both natural notes directly above and below each half note. This later became known as "enharmonic spelling", such as the half note between notes **C** and **D** having the two names of **C sharp** or **D flat** and in this case, also a double color relationship which we, here at **MUSICAL COLORS**, have termed "enharmonic coloring" (EC).

Rudolph - Sometime around **1075 A.D.**, Rudolph of Saint Trond introduced a colored note system, which represented the Greek modes of plainsong:

Mode	Color
Dorian	**Red**
Phrygian	**Green**

Lydian	**Yellow**
Mixolydian	**Violet**

Gaffurio - Around **1492**, Franchino Gaffurio reintroduced colorized modal music in Europe, with the following color relationships to plainsong:

Mode	Color
Dorian	**Crystalline**
Phrygian	**Orange**
Lydian	**Red**
Mixolydian	**Undefined Mixed Color**

Cardanus - In **1570**, Girolamo Cardanus developed a system of corresponding tone intervals with, among many other things, colors:

Interval	Color
Octave	**White**
Major Sixth	**Green**
Minor Sixth	**Violet**
Fifth	**Yellow**
Fourth	**Blue**
Major Third	**Black**
Minor Third	**Red**

Kirchner - Around the year **1646**, Athanasius Kirchner developed a system of correspondences between musical intervals and colors as follows:

Interval	Color
Octave	**Green**
Seventh	**Blue-Violet**
Major Sixth	**Fire Red**
Minor Sixth	**Red-Violet**
Augmented Fifth	**Dark Brown**
Fifth	**Gold**
Diminished Fifth	**Blue**
Fourth	**Brown-Yellow**
Major Third	**Bright Red**
Minor Third	**Gold**
Major Second	**Black**
Minor Second	**White**

Cureau - Marin Cureau de la Chambre, in **1650**, proposed a simple scheme of colored musical intervals based on Aristotle's version:

Interval	Color
Double-Octave	**Black**
Twelfth	**Violet**
Eleventh	**Blue**
Octave	**Green**
Fifth	**Red**
Fourth	**Yellow**

Base	White

Newton - In **1704** Sir Isaac Newton's treatise *Optics* was first published, which partially dealt with the correlation between colors of the spectrum and notes of the musical scale. Newton mathematically, but quite arbitrarily, divided the visible light spectrum into seven colors (six known colors and one new color, which he named "Indigo"): **Red**, **Orange**, **Yellow**, **Green**, **Blue**, **Indigo** and **Violet**. One should understand that Newton's **Blue** is really the intermediate shade between **Green** and the "true" **Blue** (i.e. **Green-Blue**), and his **Indigo** is really just a shade slightly off this **Blue** towards the color **Violet** (i.e. **Blue-Violet**). Never the less, Newton saw that the mathematical relationships of these six known colors, including his new color, were similar to those of the natural notes in music. He consequently assigned the acronym "**ROYGBIV**" to these seven colors, as he split the rainbow seven ways intentionally to mirror the seven notes of a musical scale; although he suspected that the delineation between each was perhaps somewhat undefined, as further scientific proof was needed:

Intervals	Notes	Color
M7th to **Octave**	**B** to **C**	**Violet**
M6th to **M7th**	**A** to **B**	**Indigo** (really **Blue-Violet**)
P5th to **M6th**	**G** to **A**	**Blue** (really **Green-Blue**)
P4th to **P5th**	**F** to **G**	**Green**
M3rd to **P4th**	**E** to **F**	**Yellow**
M2nd to **M3rd**	**D** to **E**	**Orange**
Tonic to **M2nd**	**C** to **D**	**Red**

Diez - In **1723**, David Gottlob Diez produced a system of corresponding musical notes to colors, along with other things such as planets; just as the Greeks had done 2000 years prior:

Note	Color
G	**Water-Blue**
G	**Blue**
F	**Various Colors**
E	**Green**

D	**Yellow**
C	**Red**
B	**Gray**
A	**Black**

Castel - In **1734**, the French Jesuit monk, mathematician and physicist, Louis Bertrand Castel, was a firm believer of there being a direct relationship between the seven "supposed" colors of the spectrum and the seven natural notes in music. In 1763, he published his general theory of color-music in *Esprits Saillies et Singularites du Pere*. Castel was the first person to propose the construction of a "Light Organ" (Clavecin Oculaire), a new musical instrument, which would simultaneously produce both the sound and his associated color for each musical note:

Note	Color
B	**Dark Violet**
A#	**Agate**
A	**Violet**
G#	**Crimson**
G	**Red**
F#	**Orange**
F	**Golden Yellow**
E	**Yellow**
D#	**Olive Green**
D	**Green**
C#	**Pale Green**
C	**Blue**

Mizler - In **1739**, Lorenz Christoph Mizler developed his scheme for colored musical notes, in response to Newton's theoretical work:

Note	Color
B	**Violet**
A	**Indigo** (really **Blue-Violet**)
G	**Blue** (really **Green-Blue**)
F	**Green**
E	**Yellow**
D	**Orange**
C	**Red**

Krüger - Johann Gottlob Krüger, in **1743**, slightly altered Newton's musical tone to color correlation scheme, producing the following variation:

Note	Color
B	**Violet**
A	**Purple**
G	**Sky Blue**
F	**Green**
E	**Sulfur Yellow**
D	**Golden Yellow**
C	**Red**

Euler - Around **1760**, the mathematician Leonhard Euler developed a system of correspondences between musical notes and colors:

Note	Color
B	**Violet**

A	**Blue**
G	**Green**
F	**Yellow**
E	**Orange**
D	**Red**
C	**Purple**

Lefébure - In the year **1789**, Louis François Henri Lefébure modified Castel's scheme of colored musical notes, changing it to the following:

Note	Color
B	**Violet**
A	**Orange**
G	**Yellow**
F	**Indigo** (really **Blue-Violet**)
E	**Red**
D	**Green**
C	**Blue** (really **Green-Blue**)

Field - In **1817**, George Field published an essay entitled *Chromatics, or, an essay on the analogy and harmony of colours*, where he presented his own musical note to color associations:

Note	Color
B	**Dark Green**
A	**Green**
G	**Yellow**

F	**Orange**
E	**Red**
D	**Violet**
C	**Blue**

Fourier - In **1846**, Charles Fourier wrote in his *Theorie de l'Unite Universelle*, that the connection between colors and musical notes was based on the following:

Note	Color
B	**Red**
A	**Orange**
G	**Yellow**
F	**Green**
E	**Azure**
D	**Indigo** (really **Blue-Violet**)
C	**Violet**

Sudre - In **1862**, François Sudre's death occurred, however he left behind him the invention of "Solresol", a universal language based upon the seven musical pitches (**do**, **re**, **mi**, **fa**, **sol**, **la**, **si** - with "middle **C**" set as "**do**"). Sudre suggested the system for encoding Solresol could use lanterns using the following color sequence:

Solresol	Note	Color
si	**B**	**Violet**
la	**A**	**Indigo** (really **Blue-Violet**)
sol	**G**	**Blue** (really **Green-Blue**)
fa	**F**	**Green**

mi	**E**	**Yellow**
re	**D**	**Orange**
do	**C**	**Red**

Seemann - In **1881**, the German painter, T. Seemann, devised a concept of pictorial coloring based on colored musical notes. Notice the enharmonic coloring (EC) of the half notes **C#**, **F#** and **G#**:

Note	Color
B	**Black**
A#	**Rose**
A	**Violet**
G#	**Blue-Violet** (EC of **Blue** & **Violet**)
G	**Blue**
F#	**Green-Blue** (EC of **Green** & **Blue**)
F	**Green**
E	**Yellow**
D#	**Gold**
D	**Orange**
C#	**Red-Orange** (EC of **Red** & **Orange**)
C	**Red**

Rimington - Around **1890,** Alexander Wallace Rimington began building his color-organ in England with the following note to color correspondences:

Note	Color
B	**Violet**

A#	**Blue**
A	**Purple**
G#	**Light Green**
G	**Green**
F#	**Dark Green**
F	**Olive Green**
E	**Yellow**
D#	**Light Orange**
D	**Dark Orange**
C#	**Rose**
C	**Dark Red**

Bishop - In **1893**, Bainbridge Bishop, an American composer, published an article entitled *A souvenir of the color organ, with some suggestions in regard to the soul of the rainbow and the harmony of light with marginal notes and illuminations*, regarding his system of correspondences for colored notes, which he showed as being correct with respect to the natural color of rainbows. By this time, Bishop had already constructed at least three-color organs capable of playing sound and displaying its corresponding light together or separately as seen in the following correlations. Notice the enharmonic coloring (EC) of the half notes **C#** and **D#**:

Note	Color
B	**Violet-Red**
A#	**Violet**
A	**Blue-Violet**
G#	**Blue**
G	**Green-Blue**
F#	**Green**

F	**Yellow-Green**
E	**Yellow**
D#	**Orange-Yellow** (EC of **Orange** & **Yellow**)
D	**Orange**
C#	**Red-Orange** (EC of **Red** & **Orange**)
C	**Red**

Kandinsky - Around **1895**, the famous artist Wassily Kandinsky, considered how the characteristic timbre of musical instruments might relate to colors: **Yellow** was like "an ever louder trumpet blast or a fanfare elevated to a high pitch", **Orange** was like "a church bell of medium pitch ringing the angelus, or like a rich contralto voice, or a viola playing largo", **Red** was like "fanfares with contributions from the tuba - a persistent, intrusive, powerful tone", **Vermilion** was "sounds like the tuba and parallels...with powerful drumbeats", **Purple** was like "high, clear, singing tones of the violin...successive tones of little bells (including horse bells)...called 'raspberry-colored sounds' in Russian", **Violet** was like a "cor anglais or shawm, and in its depths the deep tones of the woodwind instruments (for example, bassoon)", **Blue** was like "a flute" clear and cool, **Dark Blue** was like "the cello, and going deeper, the wonderful sonority of the contrabass; in its deep solemn form, the sound of blue is comparable to the bass organ" and **Green** was like "quiet, drawn-out, meditative tones of the violin".

Blavatsky - Around the year **1900**, Helena P. Blavatsky, founder of The Theosophical Society, published two works called *Isis Unveiled* and *The Secret Doctrine*. Her own musical tone to color correspondence was as follows:

Note	Color
Si	**Violet**
La	**Indigo** (really **Blue-Violet**)
Sol	**Black**
Fa	**Green**
Mi	**Yellow**
Re	**Orange**
Do	**Red**

Berlioz, Debussy & Wagner - Around the year **1905**, the three famous composers, Hector Berlioz, Claude

Debussy and Richard Wagner, who were all contemporaries of each other, were also interested in the connection between music and color. They were all members of the Rosicrucian Order, which based its musical theories of "just intonation" on the following sound frequencies and colors as they correlated to musical notes. Notice the enharmonic coloring (EC) of the half note **F#**:

Sound Frequency	Note	Color
	F#	**Violet-Red** (EC of **F** & **G**)
341Hz	**F**	**Violet**
320Hz	**E**	**Blue-Violet**
	D#	**Blue**
288Hz	**D**	**Green-Blue**
	C#	**Green**
256Hz	**C**	**Yellow-Green**
240Hz	**B**	**Yellow**
	A#	**Orange**
213Hz	**A**	**Red-Orange**
	G#	**Red**
192Hz	**G**	**Dark Red**

Rimsky-Korsakov - Based on an article in **1908** with the Russian press, the famous composer Rimsky-Korsakov had syneasthetically colored the "Circle of Fifths" musical keys in the following way:

Note	Color
C#	**Dusky** (the same as **D**b)
F#	**Greyish-Green** the same as **G**b)
B	**Dark Blue** (the same as **C**b)
E	**Sapphire Blue**

A	**Pink**
D	**Yellow**
G	**Brownish-Gold**
C	**White**
F	**Green**
Bb	**Darkish**
Eb	**Greyish-Blue**
Ab	**Greyish-Violet**
Db	**Dusky** (the same as **C#**)
Gb	**Greyish-Green** (the same as **F#**)
Cb	**Dark Blue** (the same as **B**)

Helmholtz - In **1910**, Herman von Helmholtz transposed musical frequencies in order to mathematically find direct scientific relationships between musical notes and visual colors using the "Law of Octaves". For example, one can take the concert pitch **A** at 440 Hz. and get another audible **A** at 880 Hz. exactly one octave above. If one were to mathematically double that octave thirty-nine more times, the frequency of the original pitch **A** would be 483,785,116,221,440 Hz. a visual light frequency seen in the natural color spectrum as **Red**. Notice the enharmonic coloring (EC) of the half notes **A#**, **C#** and **D#** in the following rough estimates:

Sound Frequency	Note	Color	Light Frequency
784 Hertz (Hz)	**G**	**Ultraviolet**	**784X10*12thHz**
740 Hertz (Hz)	**F#**	**Violet**	**740X10*12thHz**
698 Hertz (Hz)	**F**	**Blue-Violet**	**698X10*12thHz**
659 Hertz (Hz)	**E**	**Blue**	**659X10*12thHz**
622 Hertz (Hz)	**D#** (EC of **D** & **E**)	**Green-Blue**	**622X10*12thHz**
587 Hertz (Hz)	**D**	**Green**	**587X10*12thHz**

554 Hertz (Hz)	**C#** (EC of **C** & **D**)	**Yellow-Green**	**554X10*12thHz**
523 Hertz (Hz)	**C**	**Yellow**	**523X10*12thHz**
493 Hertz (Hz)	**B**	**Orange**	**493X10*12thHz**
466 Hertz (Hz)	**A#** (EC of **A** & **B**)	**Red-Orange**	**466X10*12thHz**
440 Hertz (Hz)	**A**	**Red**	**440X10*12thHz**
415 Hertz (Hz)	**G#**	**Dark-Red**	**415X10*12thHz**
392 Hertz (Hz)	**G**	**Infrared**	**392X10*12thHz**

Beach - Around **1910**, the American pianist and composer, Amy Beach, had a synesthetic color coding system for the following musical keys: **C-White**, **F Sharp-Black**, **E-Yellow**, **G-Red**, **A-Green**, **A Flat-Blue**, **D Flat-Violet** and **E Flat-Pink**.

Scriabin - The Russian composer, Alexander Scriabin, was highly influenced by the French and Russian salon fashions and he seems to have been strongly influenced by the theosophical ideas of Madame Blavatsky. The synesthetic motifs found in Scriabin's compositions like *Prometheus*, composed in **1911**, are developed off of color-coding ideas from Newton. These ideas follow a basic mathematical musical algorithm called the "Circle of Fifths", which corresponded to his concept of the following colors, as he modulated from one musical key to another:

Note	Color
C#	**Violet** (same as **D**b)
F#	**Bright Blue** (same as **G**b)
B	**Blue** (same as **C**b)
E	**Sky Blue**
A	**Green**
D	**Yellow**
G	**Orange**
C	**Red**

F	**Dark Red**
Bb	**Rose**
Eb	**Steel**
Ab	**Purple**
Db	**Violet** (same as **C#**)
Gb	**Bright Blue** (same as **F#**)
Cb	**Blue** same as **B**)

De Maistre - In **1919**, Roy De Maistre, a young Australian musician turned painter, showed how specific musical notes corresponded to different hues to form a colored musical note code. Notice the enharmonic coloring (EC) of all the five half notes (i.e. **A#**, **C#**, **D#**, **F#** and **G#**):

Note	Color
G#	**Violet-Red** (EC of **Violet** & **Red**)
G	**Violet**
F#	**Indigo-Violet** (EC of **Indigo** & **Violet**)
F	**Indigo** (really **Blue-Violet**)
E	**Blue**
D#	**Green-Blue** (EC of **Green** & **Blue**)
D	**Green**
C#	**Yellow-Green** (EC of **Yellow** & **Green**)
C	**Yellow**
B	**Orange**
A#	**Red-Orange** (EC of **Red** & **Orange**)
A	**Red**

Theremin - In the year **1922**, Leon Theremin invented the "Illumovox" to accompany his "Etherphone" (the instrument now known as a Theremin). When connected to the Etherphone, the Illumovox projected an evolution of hues of the natural color spectrum in direct correspondence to the pitch changes on the Theremin instrument. These correspondences were straightforward, with the lowest pitches as almost **Infrared** to **Red** and then with successively higher pitches moving through the colors **Orange**, **Yellow**, **Green**, **Blue** and **Violet** up to the highest pitches bordering on **Ultraviolet**.

Klein - In the early 20th century, the British non-figurationist painter, Adrian B. Klein, realized the possibilities of light and became a leading specialist in music kinetic art. In **1926** he published his *Colour Music: The Art of Light*, where he presented his note to color correlations:

Note	Color
B	**Dark Violet**
A#	**Violet**
A	**Light Violet**
G#	**Blue**
G	**Light Blue**
F#	**Dark Green**
F	**Green**
E	**Yellow**
D#	**Orange**
D	**Dark Orange**
C#	**Red**
C	**Dark Red**

Appeli - Around **1940**, Appeli had related musical notes to colors:

Note	Color

B	**Purple**
A#	**Violet**
A	**Blue**
G	**Green-Blue**
F	**Green**
E	**Yellow**
D	**Orange**
C	**Red**

Heaney - In **1942** a music teacher named Gertrude M. Heaney created an educational apparatus for teaching music through the use of color and consequently was granted a U.S. patent for her invention. It consisted of a practice piano pad, that was colored, and also an instruction manual. As with Bishop's and Maistre's system, notice the enharmonic coloring (EC) of the half notes **C#**, **D#**, **F#** and **G#**:

Note	Color
B	**Yellow**
A#	**Pink** or (EC of **Orange** & **Yellow**)
A	**Orange**
G#	**Red** & **Orange** (EC of **Red** & **Orange**)
G	**Red**
F#	**Green** & **Red** (EC of **Green** & **Red**)
F	**Green**
E	**Purple**
D#	**Blue** & **Purple** (EC of **Blue** & **Purple**)
D	**Blue**

C#	**Brown** & **Blue** (EC of **Brown** & **Blue**)
C	**Brown**

Vyshnegradsky - The composer Ivan Vyshnegradsky is most famous for his groundbreaking work with alternate tuning systems and compositions using quartertones during the early 20th century. Around **1970**, he disclosed his own correlation of musical notes to colors shortly before his death nine years later. Notice the enharmonic coloring (EC) of the half note **C#**:

Note	Color
B	**Red**
A#	**Light Violet**
A	**Violet**
G#	**Blue**
G	**Light Blue**
F#	**Dark Green**
F	**Green**
E	**Yellow**
D#	**Gold**
D	**Orange**
C#	**Red-Orange** (EC of **Red** & **Orange**)
C	**Red**

Wiley - In **1991**, Michael John Wiley publicly displayed colored stickers on his classical guitar's fret board. He used the six simple named colors in English (**Red**, **Orange** **Yellow** **Green** **Blue**, and **Violet**). He did not include **Indigo** in his list of colors as it was purely an historic artifact, it was too close in shade to the colors **Blue** and **Violet** for practical application on musical instruments and it was not part of the hexagonal theoretical models of the six natural colors. Rather, he used **White** (**Gray** when displayed on white backgrounds) as the center (**C**) and resolution of all the other notes. His color assignment was closely resembling that of Euler's, though like De Maistre and Heaney, he extended the idea of "enharmonic spelling" to the five half notes, using color; what Wiley termed "enharmonic coloring". Notice the enharmonic coloring (EC) of the five half notes **C#**, **D#**, **F#**, **G#**

and **A#**. As with the prior existence of several other similar color-coded musical systems, these ideas were really nothing new at all:

Note	Color
B	**Violet**
A#	**Blue** & **Violet** (EC of **Blue** & **Violet**)
A	**Blue**
G#	**Green** & **Blue** (EC of **Green** & **Blue**)
G	**Green**
F#	**Yellow** & **Green** (EC of **Yellow** & **Green**)
F	**Yellow**
E	**Orange**
D#	**Red** & **Orange** (EC of **Red** & **Orange**)
D	**Red**
C#	**White** & **Red** (EC of **White** & **Red**)
C	**White**

De Clario - In **1995**, and Australian named Dominic De Clario gave a scientific and spiritual presentation on the aspects of light and sound where he assigned colors to the white keys of a piano. All of the colors in his presentation were coordinated to the particular keys of the music, as well as the particular notes being played. De Clario wanted to have White light as part of the color selection and he arbitrarily chose to add it on the note **B**, as he saw it as the sum of all of the visible colors preceding it; somewhat similar to what Wiley had done four years prior:

Note	Color
B	**White**
A	**Violet**
G	**Blue**

F	**Green**
E	**Yellow**
D	**Orange**
C	**Red**

This brings us to the end of our **MUSICAL COLORS** family tree timeline.

The idea of using color to represent musical whole tones in tandem with the idea of combining these same colors to represent the musical half tones between them is practically as old as the science of music itself. Whether these half note color combinations are represented as actual mixtures of two colors (i.e. one resulting mixed color), or whether these half notes are represented by two separate colors (i.e. not mixed into one color but never the less shown in tandem with one another), does not really matter, for the two colors chosen are still present in referencing half notes. Therefore, the theory behind such an idea remains consistent.

The randomness of assigning colors to notes demonstrates how these **MUSIC COLOR** schemes are arbitrary to somewhat scientific at best. It is fairly easy to coordinate seven colors to seven notes and a scientific relationship is not necessarily established just because there can be equal numbers of each. The concept of tone to color calibration has been, for the most part, an arbitrary but necessary starting point for these systems. Like many other people throughout the world, here at **MUSICAL COLORS** we understand these systems and we participate by bringing this ancient knowledge to full application potential. After all, the knowledge has always been there in some form or another.

However, the one specific and fairly recent example that validates these principals quite poignantly is the **U.S. Patent No. 2,284,868**, which clearly states that "...seven elements representing the natural notes of an octave in the musical scale are preferably colored..." (And remember this is an arbitrary selection of colors); while the "...five elements representing the half notes of the octave are preferably colored as a mixture of the colors applied to the natural note-representing elements at opposite sides thereof...", also being arbitrary, although enharmonically theoretical in nature based on previous musical knowledge. This patent was granted on June 2nd, 1942 to Gertrude M. Heaney, an elementary school teacher, and it provides that this knowledge is now and forever legally in the public domain.

Even though there are many current systems and methods for teaching music, for the most part, music theory, music composition and musical instrumental appreciation have been taught the old fashion way; as cerebral and physical disciplines in scholarly institutions. Within the elusive past though, there is still much more to be rediscovered, just as now there is something showing us the future.

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