

## CANONICAL HOURS, THE BREVIARY

The Hours, or *Liturgia Horarum*, are the *Opus Dei*, the Divine Office of official prayers of the Church that mark the times of prayer. Together with the Mass (Eucharist), the Hours form the basis of Christian monasticism. The celebration of the *Liturgia Horarum* comprises what are termed the *Obligatories*, which must be undertaken by those who wish to become priests. The service of canonical Hours is sometimes called the “Breviary.”

The word “Breviary” caused me to think of the musical note in the British system called the “*breve*,” the *longest* notational value in common use today. There are several ways to write this note, but probably the most prevalent is that of a hollow oval note head flanked on either side by double vertical lines, the rhythmic note value of 8 beats.



The British words describing note values had always struck me as odd. Why was the longest note (the double whole note, 8 beats) called the *breve* (< Lat. *brevis*, “short”)? Why was the next longest note (our whole note, 4 beats) the *semibreve*?



Following that was the *minim*, which implied the “minimum,” whereas it was actually a rather long note (the “half note,” 2 beats).



The *crochet* was the quarter note of 1 beat, and generally considered the “quarter-maintainer” of the rhythmic pulse. In our current Western musical system, the *crochet* is the basic *rhythmic* notation. Our “common time,” denoted by “C,” means four beats per measure, the quarter note as the beat unit.



In addition to the four note values measuring 8, 4, 2, and 1 beats, there was the *longa*, a note appearing in early music, which was equivalent to a *double breve*. Although that *note* has disappeared from use, its counterpart, the *longa rest*, still appears occasionally, and indicates a silence of four measures, or 16 beats.



These five basic note values—*longa*, *breve*, *semibreve*, *minim*, and *crochet*—are indicated by the corresponding letters—L, B, SB, M, and C—in the far right-hand column of the lambda chart, and (right to left) across the top. These five note values set the right-hand *perimeter* for the “Ordinary” of the Mass.”

CHART OF “ORDINARY NOTE VALUES”

1 C	2 M		4 SB				8 B								16 L	
1/1	2/1	3/1	4/1	5/1	6/1	7/1	8/1	9/1	10/1	11/1	12/1	13/1	14/1	15/1	16/1	16L
1/2	2/2	3/2	4/2	5/2	6/2	7/2	8/2	9/2	10/2	11/2	12/2	13/2	14/2	15/2	16/2	8 B
1/3	2/3	3/3	4/3	5/3	6/3	7/3	8/3	9/3	10/3	11/3	12/3	13/3	14/3	15/3	16/3	
1/4	2/4	3/4	4/4	5/4	6/4	7/4	8/4	9/4	10/4	11/4	12/4	13/4	14/4	15/4	16/4	4 SB
1/5	2/5	3/5	4/5	5/5	6/5	7/5	8/5	9/5	10/5	11/5	12/5	13/5	14/5	15/5	16/5	
1/6	2/6	3/6	4/6	5/6	6/6	7/6	8/6	9/6	10/6	11/6	12/6	13/6	14/6	15/6	16/6	
1/7	2/7	3/7	4/7	5/7	6/7	7/7	8/7	9/7	10/7	11/7	12/7	13/7	14/7	15/7	16/7	
1/8	2/8	3/8	4/8	5/8	6/8	7/8	8/8	9/8	10/8	11/8	12/8	13/8	14/8	15/8	16/8	2 M
1/9	2/9	3/9	4/9	5/9	6/9	7/9	8/9	9/9	10/9	11/9	12/9	13/9	14/9	15/9	16/9	
1/10	2/10	3/10	4/10	5/10	6/10	7/10	8/10	9/10	10/10	11/10	12/10	13/10	14/10	15/10	16/10	
1/11	2/11	3/11	4/11	5/11	6/11	7/11	8/11	9/11	10/11	11/11	12/11	13/11	14/11	15/11	16/11	
1/12	2/12	3/12	4/12	5/12	6/12	7/12	8/12	9/12	10/12	11/12	12/12	13/12	14/12	15/12	16/12	
1/13	2/13	3/13	4/13	5/13	6/13	7/13	8/13	9/13	10/13	11/13	12/13	13/13	14/13	15/13	16/13	
1/14	2/14	3/14	4/14	5/14	6/14	7/14	8/14	9/14	10/14	11/14	12/14	13/14	14/14	15/14	16/14	
1/15	2/15	3/15	4/15	5/15	6/15	7/15	8/15	9/15	10/15	11/15	12/15	13/15	14/15	15/15	16/15	
1/16	2/16	3/16	4/16	5/16	6/16	7/16	8/16	9/16	10/16	11/16	12/16	13/16	14/16	15/16	16/16	1 C

“Note Values” is not only the title of one of Gurdjieff Movements; it is actually one of the “Obligatories.” (For emphasis, let it be restated here that the celebration of the *Liturg Horarum* concerns the *Obligatories*. Those who wish to become priests are under *obligation* to participate in the celebratory service of the “Breviary,” the Canon of Hours.

The simple chart of Note Values *obliges* us to take note of several things.

Notice, for one thing, that it is constructed upon the principle of opposition: “right-handed” and “left-handed.” Whereas the five “ordinary” note values (indicated by L, B, SB, M, C) in the right-hand column (marked out on the previous chart) describe our *longest* note values; those in the *left-hand column* of this “Proper” chart (below) are indicative of our common *shortest* rhythmic note values. In the British system these are termed Crochet (1), Quaver (1/2), Semiquaver (1/4), Demisemiquaver (1/8), and Hemidemisemiquaver (1/16), and are shown by the corresponding letters C, Q, SQ, DSQ, and HDSQ on the chart.

CHART OF “PROPER NOTE VALUES”

<b>C</b>	<b>1/1</b>	2/1	3/1	4/1	5/1	6/1	7/1	8/1	9/1	10/1	11/1	12/1	13/1	14/1	15/1	16/1
<b>Q</b>	1/2	<b>2/2</b>	3/2	4/2	5/2	6/2	7/2	8/2	9/2	10/2	11/2	12/2	13/2	14/2	15/2	16/2
	1/3	2/3	<b>3/3</b>	4/3	5/3	6/3	7/3	8/3	9/3	10/3	11/3	12/3	13/3	14/3	15/3	16/3
<b>SQ</b>	1/4	2/4	3/4	<b>4/4</b>	5/4	6/4	7/4	8/4	9/4	10/4	11/4	12/4	13/4	14/4	15/4	16/4
	1/5	2/5	3/5	4/5	<b>5/5</b>	6/5	7/5	8/5	9/5	10/5	11/5	12/5	13/5	14/5	15/5	16/5
	1/6	2/6	3/6	4/6	5/6	<b>6/6</b>	7/6	8/6	9/6	10/6	11/6	12/6	13/6	14/6	15/6	16/6
	1/7	2/7	3/7	4/7	5/7	6/7	<b>7/7</b>	8/7	9/7	10/7	11/7	12/7	13/7	14/7	15/7	16/7
<b>DSQ</b>	1/8	2/8	3/8	4/8	5/8	6/8	7/8	<b>8/8</b>	<b>9/8</b>	10/8	11/8	12/8	13/8	14/8	15/8	16/8
	1/9	2/9	3/9	4/9	5/9	6/9	7/9	8/9	<b>9/9</b>	<b>10/9</b>	11/9	12/9	13/9	14/9	15/9	16/9
	1/10	2/10	3/10	4/10	5/10	6/10	7/10	8/10	9/10	<b>10/10</b>	11/10	12/10	13/10	14/10	15/10	16/10
	1/11	2/11	3/11	4/11	5/11	6/11	7/11	8/11	9/11	10/11	<b>11/11</b>	12/11	13/11	14/11	15/11	16/11
	1/12	2/12	3/12	4/12	5/12	6/12	7/12	8/12	9/12	10/12	11/12	<b>12/12</b>	13/12	14/12	15/12	16/12
	1/13	2/13	3/13	4/13	5/13	6/13	7/13	8/13	9/13	10/13	11/13	12/13	<b>13/13</b>	14/13	15/13	16/13
	1/14	2/14	3/14	4/14	5/14	6/14	7/14	8/14	9/14	10/14	11/14	12/14	13/14	<b>14/14</b>	15/14	16/14
	1/15	2/15	3/15	4/15	5/15	6/15	7/15	8/15	9/15	10/15	11/15	12/15	13/15	14/15	<b>15/15</b>	<b>16/15</b>
<b>HDSQ</b>	<b>1/16</b>	2/16	3/16	4/16	5/16	6/16	7/16	8/16	9/16	10/16	11/16	12/16	13/16	14/16	15/16	<b>16/16</b>
	<b>HDSQ</b>	<b>DSQ</b>		<b>SQ</b>				<b>Q</b>								<b>C</b>

Let’s briefly look further.

The crochet, or quarter note, cut in half, becomes the eighth note, worth half a beat.



In the British system, this eighth (8<sup>th</sup>) note is the “quaver,” the name held to originate from the word that means “tremulous” or “quivering.” A “quiver” is also the sack where arrows were kept, and according to some, the quiver held eight arrows. The word may also have to do with “quay,” which sounds like “key.” A “quay” is a wharf, an artificial landing place where sea-going ships dock and unload, and then take on new cargo for a return voyage.

Continuing down the line of note values, the stream of quavers subdivides again into halves, termed *semiquavers*, notes with 1/4 beat. We call them 16<sup>th</sup> notes.



The 16<sup>th</sup> notes further subdivide into halves (*demisemiquavers*, notes with 1/8 beat), to become our 32<sup>nd</sup> notes.



And then again into halves (the *hemidemisemiquavers*, notes with 1/16 beat), called 64<sup>th</sup> notes.

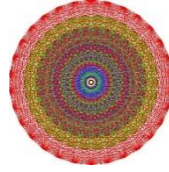


The one note value which is common to *both* long and short values is the quarter note, the One called the *crochet*, the beat unit 1. Of course, it is not always the case that the quarter gets one beat; the value depends upon the “time signature.” In 4/8 time, for instance, a quarter note has the value of 2; and in 2/2 (cut) time, it is only 1/2 beat. Already, due to the relativity of time, there is apparent confusion.

The word “crochet” itself has a double meaning. In craft guilds, and when used as a noun, it refers to a handicraft where a string of yarn is looped into patterns using a hook or needle.

As a verb, “to crochet” means to make a whole garment, a flat piece, from the balled strand of yarn.

## CROCHET



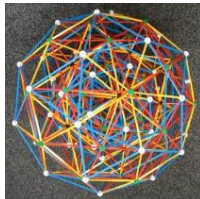
Since the word “crochet,” in Old French, means “little hook,” it is argued that the note name referred to the eighth note, the black note with a “hook” attached to the top of the stem; in fact, in France today, the term *croche* refers to the eighth note. Thus again, there is confusion.

In some languages, the name of the *crochet* actually means “black” (in French, *noire*; and in Spanish, Catalan, and Galician, *negre*), the reason being to distinguish it from the old Longa, a white note also notated with a “hook” or stem.

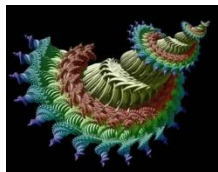


In contrast, the *crochet* (quarter note) was written in black mensural notation, and that practice is still carried on today. At least that part of the situation, the “long and short of it,” so to say, seemed fairly “black and white.”

I had mentioned *crochet* in one of my previous book, *The Meaning of the Musical Tree*, where I had associated it with “the shadow” of the E8, which is that “higher dimensional” mathematical conception considered of vital importance in heterotic string theory.



Alternatively we might see this crocheted “doily” as a spiral.



Keep in mind, for future reference, that the DNA spiral composed of 64 *codons* is the result of many millions of years of *memory* stored in a biological system.

---

<sup>1</sup> <http://holofractal.net/author/andreasobjervegmail-com/>

## STRING THEORY AND HETEROTIC STRINGS

According to string theory

- a heterotic string is a closed string in which there are boundary conditions
- the boundaries express left-moving and right-moving excitations (clockwise/counterclockwise), each showing a different character
- there are 16 mismatched dimensions
- these dimensions must somehow be “compacted”

Physicists say that the heterotic string is somehow embedded in what is called a “membrane” (or simply “brane,” for short), and somehow it creates *harmonics* (!) which translate into energy and mass through mechanical actions. So far, however, what, exactly, this “brane mechanism” is, and how it works remains conjecture. String theorists only know that it works somehow.

Revisiting this “hetero” string and its “boundary conditions,” I now found myself dumbstruck by the immensity of what was being revealed in this simple musical lambda chart. The prefix “hetero” suggests dissimilar constituents and oppositional traits. The word “heterosexual” involves the two opposite sexes of male and female. There are several different directions to take from here. For one thing, there is the idea of the “carpenter’s square.”

## SQUARES AND MITERS

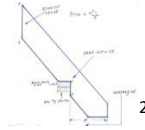
The “right-handed” and “left-handed” boundaries on the two charts of “Note Values” do indeed form a “carpenter’s square,” that tool commonly used by carpenters to lay out angles, particularly 90 and 45 degree angles. The tool is sometimes called a “framing square.” Jesus’ earthly father, Joseph, was a carpenter.



The square, which provides different measuring scales, including the diagonal, the board foot, and the octagonal scale, are used by Builders for laying out stairs and rafters. (Remember, Isis, mother of Horus, wore a headdress depicting a stair).



Both stairs and rafters describe angles, often set at 45 degrees. A rafter is a sloped beam designed to support the roof of a house, to take the load.



A “finisher” is a craftsman who has demonstrated the ability to “edge” and “joint.” In carpentry, the joint between roof and rafter is made by beveling each of the two parts to be joined (usually at the 45-degree angle), in order to form a perfect 90 degree square corner. The procedure is called “mitering.”



Seamstresses and dressmakers also know about the craft of mitering. It was Vitvitskaia, the only important female character in *Meetings with Remarkable Men*, and the one obsessed with the study of vibrations, who learned to be a dressmaker.<sup>3</sup> Experienced dressmakers know that to make a neat square corner requires a *sacrifice of the fabric*, which must be cut to reduce the bulk. Mitering requires the “sacrifice of the mass” of the material. The picture below, at the mark of the “X,” shows this sacrificial step in the process of mitering a napkin.

MITERING A NAPKIN



As the mitering continues, at a certain point in the process the fabric actually begins to look rather like a “hat.”

THE HAT



Wait! This hat resembles the one worn by the pope. Pay close attention to the *name* of the Pope’s hat. Yes, it’s called the “miter!” The official name of the papal tiara is known as the “mitra papalis.”

<sup>2</sup> By Johnalden at the English language Wikipedia, CC BY-SA 3.0, <https://commons.wikimedia.org/w/index.php?curid=10526082>

<sup>3</sup> Meetings With Remarkable Men, p. 124

## THE POPE'S MITER



Note that in the Pope's conical headdress, there appears to be the figure of a man *wedged* in between the two side triangles, presumably his task being to bevel them together, thus lightening the load.<sup>4</sup> Hmm . . . it was starting to become apparent why the Christian Pope, along with the Fathers of the Church and important members of his cabinet, don the symbolic *miter*.<sup>5</sup>

Now notice that similar type of cone-shaped hat worn by Gurdjieff . . .



It's a tricky job, this beveling and mitering. Who is the one who can do it?

Goethe had set out the question in *Faust*, in the poem "Prelude on the Stage."

When unrelated things that know no blending  
Send forth their vexed, uneasy jarring sound—  
Who then bestows the rhythmic line euphonious  
The ordered pulse to stir or soothe the soul  
Who marshals fragments to a ceremonious  
And splendid music, universal, whole?

The Faustian answer now presented itself. The one who "bestows the rhythmic line" is man himself.

Man's purpose and function is to bevel, to join one thing to another. What is not clear from the physics of heterotic strings, but is made abundantly clear in the "Chart of Note Values" is the way the beveling happens. Before beveling, each side of the square "fabric" expresses five note values. After beveling, (which, in this case, means counting only one, not both, of the note values at the four corners), the values are *reduced* from 20 down to 16.

---

<sup>4</sup> Wikipedia, Zenon-von-Verona, pope's miter

<sup>5</sup> There is a conch shell named "mitra papalis" because of its cone-shaped form).

<sup>6</sup> [https://www.google.com/search?q=Gurdjieff+pictures&biw=1600&bih=799&noj=1&site=webhp&tbn=isch&imgil=jYoNW\\_wPj72PM%253A%253BL-Yloi6Yhb2NYM%253Bhttp%25253A%2525](https://www.google.com/search?q=Gurdjieff+pictures&biw=1600&bih=799&noj=1&site=webhp&tbn=isch&imgil=jYoNW_wPj72PM%253A%253BL-Yloi6Yhb2NYM%253Bhttp%25253A%2525)



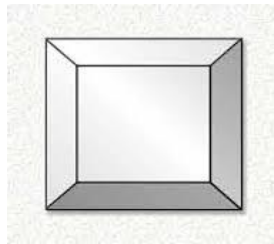
Counting *clockwise* around the perimeter of the chart, the 16 “footnote values” are as follows:

- Five across the Top row: Crochet, Minim, Semibreve, Breve, Longa
- Four in the Vertical right-hand column [Longa cut off]: Breve, Semibreve, Minim, Crochet
- Four across the Bottom [Crochet cut off]: Quaver, Semiquaver, Demisemiquaver, Hemidemisemiquaver
- Three in Vertical left-hand column [both Hemidemisemiquaver and Crochet cut off]: Demisemiquaver, Semiquaver, Quaver

(Counting *counterclockwise* around the perimeter produces the same 16 note values).

The beveling effect is astonishing! Now, instead of a flat piece, the object takes on a three-dimensional aspect!

BEVELED GLASS



Of course, truth be told, the added dimension is really only an optical illusion, a magic trick produced by mitering the edges. The whole bedeviling thing acts as a hologram!

Yikes! Are we humans, living on the perimeter of the universe, trapped in a hologram where our everyday experiences are really projections taking place on a two-dimensional flat surface?

It was in the 1990s that two physicists, Leonard Susskind (the one who invented string theory) and Nobel prize winner Gerard 't Hooft, looked at the simple credit card (a two-dimensional piece of etched plastic which, when illuminated with laser light, projected a 3D image), and suggested that this same principle might apply to the whole universe. They noted the fact that the holographic image works because it records the relationships between *light* in different places.<sup>7</sup>

The light acts as a laser beam. It “sees” what is necessary and reconstructs the whole (hole) from the part. It does not require the “bulk” of information. In fact, the *massive bulk* appears not only superfluous but perhaps may even be detrimental (TMI).<sup>8</sup>

The seeing that takes place doesn't happen inside the bulk (or mass); rather, it occurs *at the edge*, from the illusory 3D perspective of the perimeter. The result is that we see only partially, and we then react to the images that, for us, appear to be the whole of reality. Here we live and move and have our being. We humans live on the edge of reality. Quite literally, we are always “on edge.”

---

<sup>7</sup> See Lisa Randall, *Warped Passages*, p. 28

<sup>8</sup> TMI, the acronym for “too much information”: the mind is overwhelmed by the sheer volume of data.

## LIVING ON THE EDGE

	C	M		SB				B								L	
C	1/1	2/1	3/1	4/1	5/1	6/1	7/1	8/1	9/1	10/1	11/1	12/1	13/1	14/1	15/1	16/1	L
Q	1/2	2/2	3/2	4/2	5/2	6/2	7/2	8/2	9/2	10/2	11/2	12/2	13/2	14/2	15/2	16/2	B
	1/3	2/3	3/3	4/3	5/3	6/3	7/3	8/3	9/3	10/3	11/3	12/3	13/3	14/3	15/3	16/3	
SQ	1/4	2/4	3/4	4/4	5/4	6/4	7/4	8/4	9/4	10/4	11/4	12/4	13/4	14/4	15/4	16/4	SB
	1/5	2/5	3/5	4/5	5/5	6/5	7/5	8/5	9/5	10/5	11/5	12/5	13/5	14/5	15/5	16/5	
	1/6	2/6	3/6	4/6	5/6	6/6	7/6	8/6	9/6	10/6	11/6	12/6	13/6	14/6	15/6	16/6	
	1/7	2/7	3/7	4/7	5/7	6/7	7/7	8/7	9/7	10/7	11/7	12/7	13/7	14/7	15/7	16/7	
DSQ	1/8	2/8	3/8	4/8	5/8	6/8	7/8	8/8	9/8	10/8	11/8	12/8	13/8	14/8	15/8	16/8	M
	1/9	2/9	3/9	4/9	5/9	6/9	7/9	8/9	9/9	10/9	11/9	12/9	13/9	14/9	15/9	16/9	
	1/10	2/10	3/10	4/10	5/10	6/10	7/10	8/10	9/10	10/10	11/10	12/10	13/10	14/10	15/10	16/10	
	1/11	2/11	3/11	4/11	5/11	6/11	7/11	8/11	9/11	10/11	11/11	12/11	13/11	14/11	15/11	16/11	
	1/12	2/12	3/12	4/12	5/12	6/12	7/12	8/12	9/12	10/12	11/12	12/12	13/12	14/12	15/12	16/12	
	1/13	2/13	3/13	4/13	5/13	6/13	7/13	8/13	9/13	10/13	11/13	12/13	13/13	14/13	15/13	16/13	
	1/14	2/14	3/14	4/14	5/14	6/14	7/14	8/14	9/14	10/14	11/14	12/14	13/14	14/14	15/14	16/14	
	1/15	2/15	3/15	4/15	5/15	6/15	7/15	8/15	9/15	10/15	11/15	12/15	13/15	14/15	15/15	16/15	
HDSQ	1/16	2/16	3/16	4/16	5/16	6/16	7/16	8/16	9/16	10/16	11/16	12/16	13/16	14/16	15/16	16/16	C
	HDSQ	DSQ		SQ				Q								C	

I believe that this chart can go far to answer some of the conundrums prevalent on the cutting edge of current scientific thought. For example:

- CHIRALITY (> Greek  $\chi\epsilon\iota\rho$  (*kheir*), meaning "hand." A system is "chiral" if it is distinguishable from its mirror image.

Our chart here is constructed upon the chiral principle: "right-handed" and "left-handed."

The two sides, mirror images, are distinguishable because of their note values.

RIGHT-HANDED: There are the five long note values—*longa* (16), *breve* (8), *semibreve* (4), *minim* (2), and *crochet* (1)—indicated by the corresponding letters—L, B, SB, M, and C—in the right-hand column of the lambdoma chart, and across the top row. These five note values set the right-hand *perimeter* for the “Ordinary” of the Mass.

LEFT-HANDED: There are five short note values— *crochet* (1), *quaver* (1/2), *semiquaver* (1/4), *demisemiquaver* (1/8), and *hemidemisemiquaver* (1/16)—indicated by the corresponding letters—C, Q, SQ, DSQ, and HDSQ—in the left-hand column of the lambdoma chart, and across the bottom row. These five note values set the left-hand *perimeter* for the “Proper” of the Mass.

- TOP-DOWN AND BOTTOM-UP CAUSATION, a fundamental concept found in quantum theory and brain research, and considered to be a key ingredient in the functions of complex systems, *including the human brain system*.

Our chart construction here expresses this quantum principle of “top down” and “bottom up” causation. The top down aspect begins from the longest note value (*longa*, 16/1) and continues down and around the (right-hand) corner to end at the shortest note value (*hemidemisemiquaver*, 1/16). The bottom up aspect begins from the shortest note value (*hemidemisemiquaver*) and moves up the left-hand column and around the corner to end at the longest note value (*longa*).

It is worthwhile considering how our lambdoma chart, a simple numerical construction, can define so clearly and concisely the idea of causation. Although a growing body of experimental evidence points to the validity of the idea, some skeptics ridicule it as metaphysical nonsense. What can this alleged causation be attributed to: to Gaia, to God? How could such a hypothesis ever be tested? However, these same scientists recognize that to rule out this concept of bottom up and top down causality as being irrelevant or empirically useless, or to deny the significance of the revealed data, would be unwise. They see how top-down and bottom-up causality establishes a method that reveals how hierarchical structures manifest, and in a manner that far outweighs the simple reductionist approach which utilizes behaviors of component parts. *Causation instead requires referencing the whole higher-level system.*

“Higher level,” in our lambdoma chart, references the outer border of harmonics. Without this “higher level knowledge” afforded by the hierarchical note values around the border (which themselves involve knowing the whole construction and not merely a part), it is impossible to understand the fundamental meaning of what constitutes “high” or “low” or “bottom” or “top.” The NOTE VALUES around the border of the lambdoma chart provide simple answers for hierarchy, for top-down and bottom-up, and for what is termed “whole system causation.” It is the MUSICAL NOTE VALUES that provide the essential key to the physicists’ conundrums.

*Not surprisingly, “NOTE VALUES” is the name of one of Gurdjieff’s Obligatory Movements.*

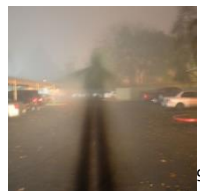
There is much more to this “limbus”—which is another word for “halo”—than one might, at first, suspect. In fact, today the scientific explanation for halos is a topic of hot debate. An older theory holds that these “rings of glory” are produced by interference between “long” and “short” waves—which naturally caused me to think of the note values, the longa and the hemidemisemiquaver. A newer theory suggests that the reflected light particles of the glory originate from wave tunneling, presumably where a light ray surrounding a drop of water transfers energy into it.

“Glory” is the word usually used to describe the optical phenomena of the halo caused by light interacting with water droplets. The halos, or “glory rings,” are sometimes associated with the Brocken Spectre, named for the tallest peak of the Harz mountain range in Germany, where, due to prevalent misty conditions, such ghostly haloes of light are commonly seen—hence its reputation as a domain of evil sorcerers. (In Goethe’s *Faust* it is the site of the Witches’ Sabbath).

#### BROCKEN SPECTRE



This spectre is evidently *one’s own shadow*, magnified, which, when observed, may appear enormous and frightening in the mists. Quite literally, one “sees oneself” when the shadow is cast upon the upper surfaces of clouds opposite the sun. The picture below shows the Brocken spectre, created artificially by standing *in front* of the headlight of a car on a foggy night.



As someone once said, “We all see our own glory, you see, but ONLY (and in fact *always*) when we walk with the sun *behind* us, and only we ourselves ‘see it up front’....how oddly but obscurely appropriate!” The biblical words suddenly come to mind “Get thee behind me, Satan.” Satan was also called Lucifer, the light-bearer. . .

I thought of Madame de Salzmänn’s words. “Gurdjieff,” she said, “taught the necessity of self-observation, but this practice has been mostly misunderstood . . .”<sup>10</sup>

Hmmm, yuh think?

---

<sup>9</sup> By Bob Blaylock - Own work, CC BY-SA 4.0, <https://commons.wikimedia.org/w/index.php?curid=42301271>

<sup>10</sup> The Reality of Being, p. 24

Madame de Salzmänn went on to say, “Usually when I try to observe, there is a point from which the observation is made, and my mind projects the idea of observing, of an observer separate from the object observed. But the idea of observing is not the observing. Seeing is not an idea. It is an act, the act of seeing. Here, the object is me . . . It is one complete act, an experience that can take place only if there is no separation between what sees and what is seen, no point from which the observation is made. Then there is a feeling of a special kind, a wish to know.”<sup>11</sup>

Yes, the wish to know. For example, I wish to know more about that halo . . .

A halo is something created by reflection or refraction on hexagonal ice-crystals. The most prevalent halos are known as “sun dogs” (also called “false suns”—which caused me to think of “faux-tons”). The word “faux-tone” is too close to photon to ignore.

The next prevalent are called “22-degree halos.” (I thought of the twenty-two paths of the Hebrew Kaballah, and also of that mysterious deck of cards called the *Tarot*, the origins and history of which are still a great puzzle, believed by a number of scholars to originate in *Egypt*). The number 22 is said to illustrate a critical stage in evolutionary development. (NASA had looked for a 22-degree halo in Europa, Jupiter’s moon, for proof of hexagonal ice crystals which form above 170K, and hint of possible life forms).

In the new model of the universe used by today’s astrophysicists, the whole volume of space (the cellular mass) is said to be encoded on a boundary surrounding the region. Physicists link this boundary with the “event horizon,” and with gravity and black holes and holograms. The physicists have been forced to utilize complex equations describing the properties of light and holographic imaging in order to try and understand the confounding thermodynamics of a black hole system.

The holographic principle was evoked to try and explain how Newton’s ironclad second law seems to be violated when objects enter a black hole. The hologram indicates how the light energy absorbed by the black hole is smeared out uniformly and the entropy is stored and conserved as bits of information the size of a “Planck’s length.” The total entropy of the system is measurable by counting the Planck “pixels” on the surface area. A “pixel” (short for “picture element”) is a dot or *point* in a graphic. Graphic artists use thousands or millions of pixels, arranged in rows and files, to form an image. Because the pixels are so close, they appear to be connected and to form one complete “connect-the-dots” picture. Theoretical operations called “scaling” play a vital role in digital imaging. Scaling is used for enlarging and magnification (known in technological jargon as “zooming,” or “oversampling”), as well as shrinking and compressing (“reduction” or “subsampling”).

Madame de Salzmänn’s words about images were running through my mind. “I see what I look at only through an image, an idea. So I do not really see, I am not in direct contact with what I see. . . . I react to the image of what I see. . . My thinking reacts automatically, making comparisons and obeying commands from all the material accumulated over time.”<sup>12</sup>

---

<sup>11</sup> The Reality of Being, p. 24

<sup>12</sup> The Reality of Being, p. 32