

(reflections on) WITHER TRAVELING.....

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“In search of LIGHT in Masonry”

Author’s Prologue

Simply stated, light is nature's way of transferring energy through space. We can complicate it by talking about interacting electric and magnetic fields, quantum mechanics, and all of that, but just remember--light is energy.

Light travels very rapidly, but it does have a finite velocity. In vacuum, the speed of light is 186,282 miles per second (or nearly 300,000 kilometers per second), which is really humming along! However, when we start talking about the incredible distances in astronomy, the finite nature of light's velocity becomes readily apparent. It takes about two and a half seconds, for instance, for a radio communication travelling at the speed of light to get to the moon and back.

“In the beginning God created the heavens and the earth. Now the earth was formless and empty, darkness was over the surface of the deep, and the Spirit of God was hovering over the waters. And God said, “Let there be light,” and there was light. God saw that the light was good”

Albedo (*/æɪˈbiːdoʊ/*), or reflection coefficient, derived from Latin albedo "whiteness" (or reflected sunlight) in turn from albus "white", is the diffuse reflectivity or reflecting power of a surface. It is the ratio of reflected radiation from the surface to incident radiation upon it. Its dimensionless nature lets it be expressed as a percentage and is measured on a scale from zero for no reflection of a perfectly black surface to 1 for perfect reflection of a white surface.

Albedo depends on the frequency of the radiation. When quoted unqualified, it usually refers to some appropriate average across the spectrum of visible light. In general, the albedo depends on the directional distribution of incident radiation, except for Lambertian surfaces, which scatter radiation in all directions according to a cosine function and therefore have an albedo that is independent of the incident distribution. In practice, a bidirectional reflectance distribution function (BRDF) may be required to accurately characterize the scattering properties of a surface, but albedo is very useful as a first approximation.

The albedo is an important concept in climatology, astronomy, and calculating reflectivity of surfaces in LEED sustainable-rating systems for buildings. The average overall albedo of Earth, its planetary albedo, is 30 to 35% because of cloud cover, but widely varies locally across the surface because of different geological and environmental features. The term was introduced into optics by Johann Heinrich Lambert in his 1760 work *Photometria*.

Albedos of typical materials in visible light range from up to 0.9 for fresh snow to about 0.04 for charcoal, one of the darkest substances. Deeply shadowed cavities can achieve an effective albedo approaching the zero of a black body. When seen from a distance, the ocean surface has a low albedo, as do most forests, whereas desert areas have some of the highest albedos among landforms. Most land areas are in an albedo range of 0.1 to 0.4. The average albedo of the Earth is about 0.3.

The albedos of planets, satellites and asteroids can be used to infer much about their properties. The study of albedos, their dependence on wavelength, lighting angle ("phase angle"), and variation in time comprises a major part of the astronomical field of photometry. For small and far objects that cannot be resolved by telescopes, much of what we know comes from the study of their albedos. For example, the absolute albedo can indicate the surface ice content of outer Solar System objects, the variation of albedo with phase angle gives information about regolith properties, whereas unusually high radar albedo is indicative of high metal content in asteroids.

Enceladus, a moon of Saturn, has one of the highest known albedos of any body in the Solar System, with 99% of EM radiation reflected. Another notable high-albedo body is Eris, with an albedo of 0.96.[14] Many small objects in the outer Solar System and asteroid belt have low albedos down to about 0.05.[16] A typical comet nucleus has an albedo of 0.04. Such a dark surface is thought to be indicative of a primitive and heavily space weathered surface containing some organic compounds.

The overall albedo of the Moon is around 0.12, but it is strongly directional and non-Lambertian, displaying also a strong opposition effect. Although such reflectance properties are different from those of any terrestrial terrains, they are typical of the regolith surfaces of airless Solar System bodies.

Two common albedos that are used in astronomy are the (V-band) geometric albedo (measuring brightness when illumination comes from directly behind the observer) and the Bond albedo (measuring total proportion of electromagnetic energy reflected). Their values can differ significantly, which is a common source of confusion.

Author's Summation

This acknowledgement of “reflective properties” is a seedling concept for energy as manifested in omniscient Deity and likewise a basis of origin of faiths, as discovered in the Zamyad Yasht. It states that ...”their Father and ruler, namely, the creator, Ahura Mazda”. As this Sanskrit writing is translated by Pike and speculated by other scholars of his time; Ahura is the Light, as shining. Mazda also means light, from Mah “to shine”. And it is because the two nouns are synonymous that the Deity is sometimes called Mazda-Ahura and often by one of the other names alone. A feasible interpretation into this is the plurality of them together as the “Light and the Reflection”. Albedo in due form.

When an initiate is first brought into the light in a Masonic Lodge, the radiance come from the Lesser Lights, which form a triangle about the Altar. It seems, at first, rather odd that so great and important a symbol should receive such scant attention in the ritualistic body of Freemasonry.

We are instructed that they are called Lesser Lights, that they are placed in a triangle, that by their light we may see other objects, that they represent the Sun, Moon and Worshipful Master, for certain reasons which are rather briefly explained . . . and that is all! Later on we learn, more by example than by precept, more by custom than by law, that Lesser Lights are always lit when a lodge is opened. Even when their flames do not really burn (have you ever stood at a grave side on a day too windy to permit the flickering candle to send forth its light?) they are constructively burning. They are supposed to be lighted as soon as the lodge is opened, and then the Altar is arranged; to be extinguished after the Altar is disarranged, and the Great Lights displaced. But nowhere in our ritual are we told much of anything as to why all these things are so; how the Lesser Lights came to be; what their hidden, covered, secret, symbolic meaning is.

And you can search through many Masonic writings and come to find no more light on the Lesser Lights than the ritual gives. Mackey, a great authority, is unusually brief, and beyond drawing a parallel to the use of the seven branched candelabra as described in the Great Light, and stating that their use in Masonry is very old, they appearing in print in references to Masonry in the seventeenth century, adds practically nothing to the ritual explanations.

And yet it could not be possible that so important a symbol could have no more soul than is given in the few words we devote to it. It seems obvious that it is one of those symbols in Freemasonry . . . of which there are so many! . . . which the individual brother is supposed to examine and translate for himself, getting from it what he can, and enjoying what he gets in direct proportion to the amount of labor and thought he is willing to devote to the process of extracting the meaning from the outer covering. Maybe even reflective? ...Reflective.

Let us investigate more closely; labor is enlightening, always.

Immediately after the Lesser Lights are named, our attention is directed to the fact that they are in a triangle about the Altar. In some Jurisdictions they are closely about the Altar; in others, one is placed at each of the stations of the three principal officers.

In some lodges the three Lesser Lights form a right, in others an equilateral; in others an isosceles triangle. What is uniform throughout the Masonic World is the triangular formation about the Altar; what is different is the shape and size of the triangle. Of course, it is not possible to place three lights to form anything else but a triangle, or a straight line; they cannot be made to form a square or a star. So why are there three Lesser Lights, and not two or four?

There are a number of reasons. Any thinking brother has already discovered that there is "Three" throughout the whole system of Ancient Craft Masonry; three degrees, three steps, three ancient Grand Masters; and so on. It will be no surprise to recall that three is the first of the great Sacred Numbers of the ancient Mysteries, and that it is the numerical symbol of God. While many religions of many ages and peoples have conceived of Divinity as a trinity, the figure three as a symbol of God is far older than any trinitarian doctrine. It comes from the triangle, which is the first possible figure made up of straight lines, which is without either beginning or ending. One line, or two lines have ends. They start and finish. The triangle, like the square or the five or more sided figure, has no loose ends and the triangle is the first of these which can be made; as God was always considered as first; and also as without either beginning or ending, the triangle itself soon became a symbol of Deity.

Sun worship was among the first of religions; let him who knows lay down the facts as to whether sun worship preceded fire worship, or fire worship that of the sun. To us it does not matter. Sun worship is far, far older than any recorded history; it goes back, far back, into the first of our dimmest times, which obscure the very first beginnings of intelligence. So it was only natural that the early worshipers should set a light beside their Altar or Holy place and name it for the sun.

Ancient peoples made much of sex. Their two greatest impulses were self-preservation and mating. Their third was protection of children. So enormously powerful were these impulses in primal man, that not all his civilization, his luxury, his complicated and involved life, have succeeded in removing these as the principal mainsprings of all human endeavor. It was natural for the savage worshiper of a shining God in the sky to think he, too, required a mate; especially when that mate was so plainly in evidence; the moon became the Sun's bride by a process of reasoning as plain as it was it was reflective.

Father, Mother . . . there must be a child, of course.

And that child was mercury, the nearest planet to the sun, the one the God kept closest to him. Here we have the origin of the three Lesser Lights; in earliest recorded accounts of the Mysteries of Eleusis and others, we find three lights about the Holy Place, representing the Sun, Moon and Mercury.

Albert Pike says: "They are still the three lights of a Masonic Lodge, except that for Mercury, the Master of the Lodge has been absurdly substituted." Mercury: Albedo of up to .45.

Albert Pike was a very great and a very learned man. To him Freemasonry owes a debt greater, perhaps, than to any other who ever worked to unravel; he gave long study, he interpreted our symbols, he explored truths, he made plain much that was concealed and masked. Pike himself defended the right of Masons to study and interpret the symbols of Freemasonry for themselves. So that it is with no thought of any controversy, with the immortal dead that many contend that there is, no absurdity in Freemasonry taking the ancient lights which symbolized the Sun, Moon and Mercury, and making them stand for the Sun, Moon and (a bright) Worshipful Master of His Lodge.

Light usually refers to visible light, which is electromagnetic radiation that is visible to the human eye and is responsible for the sense of sight. Visible light is usually defined as having a wavelength in the range of 400 nanometres (nm), or 400×10^{-9} m, to 700 nanometres – between the infrared, with longer wavelengths and the ultraviolet, with shorter wavelengths.

Manly P. Hall interjects an additional provocative thought process, though not defines as such but pertaining, to the absence of reflection... zero albedo. He notes the Ancient Arabians C.R.C. learned of elemental peoples in the ethereal world, as the magical creatures of the Arabian Nights which were invisible to the ordinary mortal. Maybe possessors of the knowledge of albedo magnification?? Another possibility to travel. Be it infrared, ultraviolet or other...

The main source of light on earth is the sun. Sunlight provides the energy that green plants use to create sugars, which release energy into the living things that digest them. This process of photosynthesis provides virtually all the energy used by living things. Historically, another important source of light for humans has been fire, from ancient campfires to modern kerosene lamps. With the invention of electricity, electric lighting has all but replaced firelight. Some species of animals generate their own light, called bioluminescence. For example, fireflies use light to locate mates, and vampire squids use it to hide themselves from prey.

Primary properties of visible light are intensity, propagation direction, frequency or wavelength spectrum, and polarization, while its speed in a vacuum, 299,792,458 meters per second, is one of the fundamental constants of nature. Visible light, as with all types of electromagnetic radiation (EMR), is experimentally found to always move at this speed in vacuum.

In physics, the term light sometimes refers to electromagnetic radiation of any wavelength, whether visible or not. In this sense, gamma rays, X-rays, microwaves and radio waves are also light. Like all types of light, visible light is emitted and absorbed in tiny "packets" called photons, and exhibits properties of both waves and particles. This property is referred to as the wave–particle duality. The study of light, known as optics, is an important research area in modern physics.

The Sun is Earth's primary source of light. About 44% of the sun's electromagnetic radiation that reaches the ground is in the visible light range.

Infrared - wavelengths from about 1 millimetre down the edge of visible light at about 750 nanometres (or 0.00000075 of a metre), roughly the size of the point of a needle;

Visible light - wavelengths of about 750 nanometres (0.00000075 of a metre) down to about 400 nanometres (0.0000004 of a metre), roughly the size of cells, following the familiar colour spectrum of red, orange, yellow, green, blue, indigo, violet;

Ultraviolet - wavelengths of 400 nanometres (0.0000004 of a metre) down to 10 nanometres (0.00000001 of a metre), roughly the size of molecules;

1. Immediately after the big bang, electromagnetism didn't exist as an independent force. Instead, it was joined to the weak nuclear force.
2. Particles known as B and W bosons also existed at this time.
3. When the universe was just 0.00000000001 seconds old, it had cooled enough for electromagnetism to break from the weak nuclear force and for the B and W bosons to combine into photons. The photons mingled freely with quarks, the smallest building blocks of matter.
4. When the universe was 0.00001 seconds old, quarks combined to form protons and neutrons.
5. When the universe was 0.01 seconds old, protons and neutrons began to organize into atoms.

6. Finally, when the universe was the tender age of 380,000 years old, photons broke free, and light streamed across the dark chasms of space – “and God said.....”

This light eventually dimmed and reddened until, finally, the nuclear furnaces in stars kicked on and began generating new light. Our sun turned on about 4.6 billion years ago, enriching the solar system with photons. Photons have been beaming to our humble Blue Planet ever since. Enlightening the likes of -- Newton, Huygens, Einstein -- and caused them to stop, to think, to observe and to imagine. Sharing enlightenment with all. Reflecting on all things...like Albedo and whence it travels.

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