Solstice sentiments: Leaning toward light on the shortest day

Quincy's QUILL

D. QUINCY WHITNEY

"There is privacy about it which no other season gives you. In spring, summer and fall people sort of have an open season on each other; only in winter, in the country, can you have longer, quieter stretches when you can savor belonging to yourself." – Ruth Stout

Friday is the Winter Solstice, the shortest, darkest day of the year in the Northern Hemisphere. At exactly 5:23 p.m., Friday, the North Pole will be tilted the farthest from the sun. At this turning point of the year, I think about the pause in nature when the tilt reverses itself and we head once again toward light.

Winter solstice brings to mind the painting "The Starry Night" (1889) by Vincent Van Gogh, with its luminous swirling points of light that seem to pulse and vibrate in the night sky.

It turns out there is more to this painting than night sky. Van Gogh, himself tormented by mental illness and inner turbulence, captured something in this painting that remains one of the most elusive questions in modern physics: the mystery of turbulence.

Essentially, science cannot mathematically decipher, anticipate or predict turbulence – how a river will flow, how a wasp of smoke will blow, how the air moves around an airplane's wings. Based upon a picture of a distant star from the NASA/ESA Hubble Space Telescope, Van Gogh perfectly depicts natural turbulence with mathematical precision.

Van Gogh used the concept of luminance, the measure of relative brightness between points, and what scientists call the "scaling law" which refers to the same patterns repeated at different spatial scales. The scientific reason that Van Gogh's swirling lights in Starry Night seem to vibrate is that the eye is more sensitive to changes in luminance than changes in color.

Not so surprisingly, artists often intuit and portray complex concepts long before science has deciphered them. In art and physics, brain surgeon Leonard Shlain studied parallel moments in the history of art and the history of physics, with the premise that revolutionary artists and visionary physicists ask the same question: "What is the nature of reality?" They both attempt to communicate about matters that do not yet have words.

For instance, it was not until Giotto resurrected interest in an arcane part of geometry, the study of cone shapes (after it had been neglected for 1,500 years), that the idea of visual perspective emerged and with it, the vanishing point, a visual representation of infinity.