

# Molecular Delirium

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**Jim Cogswell**

**Abstract.** In 2009 I completed a mural-scaled painting under the spell of the recent INSAP conference in Venice and a visit to the mosaics of Ravenna. Molecular Delirium responds to an array of scientific images based on astronomical research, in particular, computer models of the complex physics controlling star formation in our galaxy. My paper briefly examines these influences. Also, fundamental to this artwork are the perceptual and philosophical implications of artistically imaging the fragmentary and incomplete, sensations of energy in continuous transformation, and the anxiety and exhilaration of perpetual genesis through which we glimpse the unfathomable infinite.

*Molecular Delirium* is the title of an artwork I completed in 2010, made from several thousand small paper plates, painted in oil colours, systematically cut into segments and adhered to plywood panels on a layer of adhesive caulk (Figure 1).



**Figure 1.** *Molecular Delirium*, 2010, 76" x 180", oil paint, paper plates, staples, adhesive caulk on eighteen wood panels. (Photo: Jim Cogswell)

The plates swirl across the surface in low relief, tucked one beneath the other in patterns determined by the circumference of their arcs. Periodically the straight inner edge of one arc aligns with the inner edge

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of another, framing an oval where the underlying caulk oozes to the surface to form a softly sensuous ridge (Figure 2).



**Figure 2.** *Molecular Delirium* (detail), 2010, 76" x 180", oil paint, paper plates, staples, adhesive caulk on eighteen wood panels. (Photo: Jim Cogswell)

The resulting field of low relief colour is divided into bars of vertical panels, each with a distinct height, width, and colour range. The bars align into a stable rectilinear structure across the top, while their bottom edges extend downward in irregular rhythmic intervals. This overall field of banded colour is interrupted by a large oval, stretching edge to edge across its centre. This oval is defined by a shift in the colour and texture of the paper plates, the tightly harmonic fields of smooth banded colour around it contrasting with a dense cacophony of colliding individual colours within (Figure 3).



**Figure 3.** *Molecular Delirium* (detail), 2010, 76" x 180", oil paint, paper plates, staples, adhesive caulk on eighteen wood panels. (Photo: Jim Cogswell)

Within the oval, irregular mounds of paint swirl on each individual plate, colour as emulsified pigment, colour as material object, colour more noun than adjective. Here colour is presented as a substantive presence in itself, visually distinct from the exposed substrate of plates whose unpainted edges bring the rhythmic swirl of arcs to heightened intensity in the delirious heart of the piece (Figure 4).



**Figure 4.** *Molecular Delirium* (detail), 2010, 76" x 180", oil paint, paper plates, staples, adhesive caulk on eighteen wood panels. (Photo: Jim Cogswell)

I began *Molecular Delirium* immediately after returning from the 2009 INSAP conference in Venice, under the spell of that conference and the experience of seeing the appropriately themed exhibition *Infinitum* at a venue of the Venice Biennale. I also came away dazzled beyond my expectations from my visit to the mosaic sites of Ravenna just prior to the conference. It was my first exposure to such visual complexity: thousands of small, brightly coloured glass fragments imbedded in architectural structures with such palpable sensitivity to the depth C&C and angle of myriad parts evoking its cosmological vision.

*Molecular Delirium* is also inspired by several of my own previous projects, in particular by a mural commissioned in celebration of the International Year of Astronomy by the University of Michigan's Department of Astronomy for the windows of the building in which the Department is located. *Meanwhile, More Light* is the title I gave to this piece. I based it as much as possible on images from astronomical research, making an effort to highlight images of instrumentation, models, and simulations created or used by university colleagues (Figure 5).



**Figure 5.** *Meanwhile, More Light*, 2008, vinyl on window glass, twenty-eight windows, approx. 11' x 4' each. Dennison Hall, University of Michigan, Ann Arbor. (Photo Jens Zorn)

In one window, for example, the red-shifts and blue-shifts of galaxy rotation are depicted beside the Green Bank Telescope. The centrepiece of the mural was inspired by a NASA poster showing the Milky Way using a variety of electromagnetic spectra. The gamma ray Milky Way provided a horizontally rhythmical splash of garish colour across multiple windows in the centre of the building. *Meanwhile, More Light* also featured images of globular clusters, swarms of stars from the dawn of time, and a spiral galaxy, a disk of light spinning in a vast dark matter halo. The movement and colour from these scientific images and my interpretations of them were later to find their way into *Molecular Delirium* (Figure 6).



**Figure 6.** *Meanwhile, More Light* (detail), 2008, vinyl on window glass. Gamma-ray Milky Way, Feynmann Diagram: Gamma rays from matter/anti-matter annihilation, Star cluster, Spiral galaxy, and (at left) detail from *The Michigan Infrared Combiner*. (Photo: Jim Cogswell)

The image in that mural with the most far-reaching consequences for my work was a computer simulation from the astronomical research of Dr. Fabian Heitsch, who was at the time a faculty colleague at the University of Michigan, now on the faculty at the University of North Carolina, Chapel Hill. Dr. Heitsch's image illustrates the complex physics of star formation in dense clouds of molecular hydrogen. His computer model of this process shows colliding streams of gas that have swept up a massive cloud at the centre. The cloud begins to fragment, and gravity leads to the formation of stars in the densest regions (Figure 7).



**Figure 7.** *Meanwhile, More Light* (detail), 2008, vinyl on window glass. Molecular Cloud Simulation. . (Photo: Jim Cogswell)

I was especially transfixed by the ambiguity of his model out of context. For my window, I borrowed the explosive shapes and colours of his model, knowing that they might well be mistaken for buckets of flung paint, biblical pillars of fire, even conflagrations engulfing the structural supports of tall buildings in that dance of the universe we understand simultaneously as both creation and destruction.

*Here, I Am* immediately followed completion of the Astronomy Department mural, and was also inspired by Heitsch's computer model simulating the birth of stars in interstellar space. The central set of stacked paint cans bears images from my personal iconography representing the letters I AM, flanked by a split version of Heitsch's model (Figure 8).



**Figure 8.** *Here, I am*, 2009, paint cans, machine cut vinyl, rust, paper plates, oil paint, steel shelves, wood panels. (Photo: Jim Cogswell)

Between the cans one can glimpse fragments of an elaborate background lit from above, spills of colour mimicking Heitsch's model in low relief,

executed using nearly one thousand paper plates painted, cut, and layered onto wood panels in their own bright swirls. This background was my first significant experiment in using the painted plates as a material, and strongly influenced the later work (Figure 9).



**Figure 9.** *Here, I am* background plates, 2009, paint, paper plates on wood panel. (Photo: Jim Cogswell)

*Molecular Delirium* also drew on three large paper murals, themselves inspired by my exposure to other celestial images. The dominant visual element of *Silence*, from 2009, is a sequence of seven vertical ovoid shapes suggested by the gores for celestial globes, such as those by Coronelli or Cassini. These gores contain hand-cut adhesive shelf paper collages based on images representing the seven letters of SILENCE, one letter for each panel. The choice of that word as a visual foundation for my piece was based upon my memory of the well-known sentence from Pascal: *Le silence éternel de ces espaces infinis m'effraie*. Dotted lines across the mural suggest both the ecliptic as well as the celestial equator stretched taut across its centre. The tension felt where that line meets the

outer edges of the mural was carried to the invisible equator across *Molecular Delirium* (Figure 10).



**Figure 10.** *Silence*, 2009, hand-cut adhesive shelf paper, rubber stamps and ink, acrylic paint, mulberry paper and PFK Rives. (Photo: Jim Cogswell)]

In *Silence*, mulberry paper fragments, arranged in the margins around the gores, bear stamped images representing, letter for letter, a passage from the Book of Job, where God responds to the impertinence of Job's questions:

Where were you when I laid the foundation of the earth? Tell me if you have understanding. Who determined its measurement, surely you know? Or who stretched the line upon it? On what were its bases sunk or who laid its cornerstone when the morning stars sang together and all the heavenly beings shouted for joy?<sup>1</sup>

If *Silence* was the solar version, *Silence 2* was its lunar counterpart. Buried in the silvery moonlit background is another passage from the Book of Job:

Declare if you know all this. Where is the way to the dwelling of light and where is the place of darkness that you may take it to its territory and that you may discern the paths to its home?<sup>2</sup>

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<sup>1</sup> Job 38 4-7.

<sup>2</sup> Job 38 18-20.



**Figure 11.** *Silence2*, 2009, hand-cut adhesive shelf paper, tape, rubber stamps and ink, acrylic paint, mulberry paper, and BFK Rives. Photo: Jim Cogswell)

A third piece from the series is titled *There*. The margins around the gores are more terrestrial here, suggesting an oceanic expanse around continents.



**Figure 12.** *There*, 2009, hand-cut adhesive shelf paper, tape, rubber stamps and ink, acrylic paint, mulberry paper, and BFK Rives. (Photo: Jim Cogswell)

Within those margins, I have spelled out a passage from Henry David Thoreau's *Walden*. The passage concerns mapping, and slips easily from

a comment on expeditionary forays into the unknown universe to the search for internal knowledge. Thoreau wrote:

What was the meaning of that South-Sea Exploring Expedition, with all its parade and expense, but an indirect recognition of the fact that there are continents and seas in the moral world, to which every man is an isthmus or an inlet, yet unexplored by him, but that it is easier to sail many thousand miles through cold and storm and cannibals, in a government ship, with five hundred men and boys to assist one, than it is to explore the private sea, the Atlantic and Pacific ocean of one's own being alone.<sup>3</sup>

Another visual reference buried within *Molecular Delirium* draws on further meditations concerning perception and knowledge. For the two years prior to the astronomy commission I was painting a mural for the library of a local college. Titled, *Meanwhile O Reader*, the design employs my alphabetic images to spell out the eighteen letters and spaces of its title, in separate individual panels below and combined into a continuous frieze above. The title phrase, *Meanwhile O Reader*, was itself a misappropriation of a passage from Italo Calvino's novel *If On a Winter's Night a Traveller*, which reads, 'And you, too, O Reader, are meanwhile an object of reading'.<sup>4</sup> I have stumbled across another epistemological quandary, the difficulty of separating my consciousness of what I am observing from my consciousness of self (Figure 13).



**Figure 13.** *Meanwhile O Reader*, 2008, oil on canvas mounted on panels, (Photo: Jim Cogswell)

When working on a painting of this magnitude I use small paper plates as palettes. Over the course of the two years painting this piece, I saved

<sup>3</sup> Henry David Thoreau, *Walden*, ed. J Lyndon Shanley (Princeton: Princeton University Press, 1971), p. 321.

<sup>4</sup> Italo Calvino, *If On a Winter's Night a Traveller* trans. William Weaver (San Diego, Harcourt Brace Jovanovich, 1982), p. 155.

nearly every plate that I used, often a dozen or more each day. Those plates, cut and affixed to wood panels, became the core oval shape in the centre of *Molecular Delirium*, the elemental building blocks of the galaxy in formation at the centre of this space. Its unseen equator, like a string stretched taut between pegs fixed at eye level on opposing extremes of this rhythmic sequence, vibrate to the primal hum of this molecular delirium.