Alyce de Roulet Williamson Gallery, ArtCenter College of Design, Pasadena, CA
Essay for WORLDS exhibition by Stephen Nowlin, 2011
WORLDS installation images: williamsongallery.net/worlds
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Astronomical Observations
Relating To The Construction of the Heavens

IF YOU GOOGLE the phrase, "world of," you'll find every possible affinity — from the world of sports, to the world of business, to fly tying or feng shui, to crime, art and politics. It's endless. We're surrounded by worlds of the intellect and worlds of the imagination. We live in the worlds of our own making, swirling competing overlapping demanding worlds of our existence, sometimes trailing behind us worlds of difference or worlds of doubt, worlds of fun, or worlds of trouble — but we only live on one world. Earth. Not a conceptual grouping, but a physical thing — not a metaphor, but a terra firma. A rocky planet that by the scale of things cosmic, bears a virtually non-existent veneer of living organisms and their civilizations. There are other planets nearby, other worlds to complement the ephemeral worlds of our mind – physical worlds of mystery and a strangeness more real than anything imagined. These are the worlds of WORLDS.

Gaze into the night sky and you'll see the same heavens as those that inspired mythology — the places above us which are imagined to be homes to gods and their legions, places conjured by thoughts of eternity and a bliss earned through virtuous mortal existence. Paradise. Cloud Nine. The domain where deities romp – the aether from which they descend for occasional interventions in the land of terrestrials, and the dreamland to which they return. This bifurcated earth/sky perspective is an ancient dualism, split by human minds groping for pattern in the seemingly unexplainable. Over time, "above us" became symbolic of the good — and "below us" the bad. In dictionaries everywhere the antonym for heaven is hell, and to the unhappy legions condemned there by un-virtuous behavior, the bad below is envisioned as a fiery furnace, an inferno, a conflagration far worse than the worst they'd ever experienced up at the surface where ordinary life and time unfolds.

It's ironic then to realize, from the perspective of our de-mythologized present and with only the exception of some nearby light-reflecting planets, moons, and comets, that every star and starry night lovingly witnessed and every appreciative glimpse of the darkened sky's pageantry, each gasp of wonder exhaled to its spectacle, is actually a celebration of worlds described precisely by heaven's opposite — the scorching flames of hell. Look at stars, and you're seeing worlds of fire.

More accurately, the light and heat energy emitted from stars is due to massive balls of hydrogen plasma with internal thermonuclear fusion taking place. But we'll not quibble — it's fire. Get too close, and you'll experience hell in the heavens. Just ask Icarus.

Throughout the cosmos, as with our myths about it, the strange and unexpected arise. And in many cases the realities science has revealed about other worlds are stranger than the Earthly fictions with which our ancestors filled them. If from our current perspective, for example, it seems incredible to accept with any plausibility the story of Uranus, ancient Greek god of the sky who arose from a cosmic primordial soup to

sire Enceladus, the part-human part-dragon source of volcanic fires in Mount Aetna, how incredible is it to know with a far greater certainty that Enceladus is also the sixth-largest of 62 sibling moons of Saturn, a planet in a solar system formed 4.5 billion years ago in a galaxy 100,000 light years across in a universe of maybe hundreds of billions of such galaxies. Enceladus is a frozen ball concealing an ocean of liquid water that erupts through its ice crust into space through massive geysers, literally running rings around its custodial planet. And, Enceladus may just be gestating organic life beneath its tantalizing watery shell.

Worlds of fire and worlds of water. The heavens cannot be invoked without their subtext demanding our attention and imaginations. Beneath the flourish of space exploration's grandioso, there is always a quiet adagio playing to one of our deepest curiosities — where fire and water are found, there is the possibility that together they have forged living things. More us, out there.

Uncertainties and rude awakenings are commonplace in the world of WORLDS. The planet Pluto was recently demoted, joining the solar proletariat after having been a member of sun-orbiting royalty for almost a century. While stirring some controversy, the former number-nine's reclassification to "dwarf" was the result of a change in perspective by the International Astronomical Union, spurred on by the discovery of an even larger non-planet than Pluto, named Eris, by astronomer Mike Brown at Caltech. At one time christened the mysterious Planet X by Percival Lowell after 19th-century calculations predicted it should exist, Pluto had accumulated four-billion years hidden behind the scenes before finally being exposed in 1930 through observations made at Lowell's Arizona telescope. That's the same Percival Lowell who earlier was ostracized from the astronomical community for theorizing the existence of an intelligent population living on Mars, a human-like species purportedly engaged in a desperate attempt to save their parched planet by constructing canals to ferry water away from polar ice caps and into population centers. The markings on Mars' surface that inspired heated controversy over Lowell's canal assertions, are today regarded as having been optical illusions — a monument to the pitfalls of interpretation and the potential for one's perspective to send logic careening in the wrong direction.

Google "it's all a matter of perspective" and you'll get one-million-plus results, while the return on "it was once a matter of perspective" yields zero — a remarkable outcome, in a way, when so much of the history of humans observing and drawing conclusions about their own world and others can be described by the latter phrase replacing the former. Perhaps no better example of this exists than the chronicle of knowing just what object orbits another in space. For millennia, observers, scholars, and philosophers assumed the orbital path of celestial bodies to encircle their own Earthly abode — an expression of planet-centric hubris, perhaps, as well as faith in what might seem both empirically self-evident and divinely mandated. Many accounts were offered over vast stretches of time to provide this view with a finer and more convincing focus, all strained to remain compatible with prevailing religious doctrine. Yet while Werner Heisenberg rendered modern science skittish over claims of

certainty from any given perspective, we are nonetheless able to discard absolutely the geocentric, or Earth-centered, orbital system that had persisted throughout history, in favor of the heliocentric, sun-centered, one. It was not until Nicolaus Copernicus got it right in the 16th century that astronomy was liberated to discover a cascade of new knowledge that, among many other things, would ultimately enable humans and robots to leave this sphere and find reliable pathways to those worlds at which we'd been sky-gazing, and about which we'd been fantasizing, for ages. Before Copernicus, spacecraft would have wreaked drunken havoc if sent into heavens that were actually constructed according to how they were perceived.

Perspective can be everything, it would seem. In courts of law, political discourse, philosophical debate and cultural understanding, perspective contextualizes opinion, theory, belief and knowledge. From our perspective as tinier-than-tiny organisms on the eggshell-thin crusty surface of a vast consolidation of rocky space- detritus sculpted by gravity into a spherical floating mass, we look up at the worlds of outer space across a perspectival divide — an illusion that our world is still simply parted into above-us and below-us. We may be forgiven for having got it wrong for so long. There's our Earth space, and everything else was naturally considered to be outer to it — there is us, and there was the entirety of everything else that appeared so clearly to be other-than-us. Our ego-centered grasp of things is still influenced by that recurring perspective, providing a framework for those provincial allegiances we all know, need and love — to our species, our families, neighborhoods, circle of friends, cultural habits, cities, sport teams, workplaces, religions, political parties, states and countries. But beyond us, space-time is too far-flung to resonate with a unilateral and rustic self-consciousness. We may fantasize about the possibilities in our stories and literature, but we haven't yet fully expanded our perspective to include that we ourselves are an alien life form to anything found breathing or eating on another world. We don't daily identify with an Earth that is an extraterrestrial space object in relation to every other space object. We're prone to forget that our own planet floats in the very same space that we so often describe as being foreign and mysterious, or heavenly. We are not yet quite ready to assume the perspective of a cosmic cosmopolitan.

But take heart — six hundred years ago by comparison to the present, we hardly knew our sun from a hole in the ground. We continue to stir in our cocoon, and in the accelerating continuum of discovering our world and other worlds, in the progression of those tiny incremental advances in knowledge through which shine small bits of broader perspective, we're bound to know a whole lot more, pretty soon.

Stephen Nowlin is director of the Williamson Gallery, and curator of WORLDS.