Planets Without Stars

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Abstract

Because we live on a bejeweled planet, humans are very interested in all rocky planets. Planets come in many sizes and varieties. There may be more planets in the Milky Way than stars. So far, only our Earth has been shown to host philosophically advanced life. I was one of the first to write about life on rogue planets without local suns. This new essay updates planets without stars by including multiple-body orbits, and how planets could form and mutually orbit without any dust star of origin.

Astronomy and even astrology have come a long way from how we early envisioned our place in the cosmos. Thousands of years ago stars were simply amazing, and some of them, such as bright Sirius, were seen as gods. Five planets among the fixed sky stars were special: The ancient Greeks named them all from their idea of "wanderers" along the ecliptic in the celestial dome above.

All bright wanderers seemed nearby and mostly predictable, as seen from our flat Earth at the center of it all. Amazing events such as comets and bright bolides were divine omens. The idea of objective sky events following objective laws of physics would arrive much later. Modern cosmology is somewhat aligned with objective astrophysics, and not anthropocentric mechanics.

Greeks followed anthropomorphic gods on Olympus, some of whom actually cared about us mere mortals. Unique Hindu gods populated individual households. The obvious top god, our Sun, validated Egyptian dynasties; and so forth. Cosmological and sociological models were theologically structural-functional. This seeming order is why the correlating, not causally accurate,**[1]** Ptolemaic model lasted among "educated" men for 1,400 years. Galileo was very fortunate to survive the anti-intellectual clerics.

Emerging science paradigms since Copernicus, Galileo, and Kepler have reflected new astronomical tools and mathematics. Astrology and nascent astronomy distanced themselves from local villages, and took up their rightful place inside the still-limited objective heavens. There is much more to learn from the likely huge population of planets in our nearby galaxy neighborhood.

Instead of *inducing* celestial mechanics from our local ideas of the divine, we now *deduce* from new astrophysical data to help explain our local worlds. Today's physics is thereby a subset of astrophysics. Also, today's astrophysics is simultaneously a subset of physics. In other words, the greatest is composed of the smallest, orchestrated by dialectics. Cause and effect seem to be mutual within all dimensions, seen and unseen by us.

The 13th-century Nichiren Buddhist idea of *renge* (pronounced: ren-gay) embraces apparently simultaneous cause and effect. Things are both separated by, and unified by, "*absolute time*" – which is not limited by relative "c" photonic speed.

Rogue and Mutually Orbiting Planets

We are comfortable with planets like ours orbiting their star. We are also comfortable with the idea of planets being cast out of their solar systems. The further idea of mutually orbiting planets without solar origins is more difficult to understand. It is for that reason why the recent James Webb Space Telescope (JWST) discovery of "dark" planets orbiting each other is tantalizing.

Emerging solar systems are all adjusting their gravitational and orbiting relationships. Start with a condensing baryonic dust cloud, including some dark matter, gravity, and momentum, to shape what becomes a mature solar system such as our own.

Earth was, in its earliest stages, quite different from what we enjoy today. Jupiter was initially in an orbit closer to the Sun and Earth. That essentially created a hostile orbital environment for the first Earth, with several large impactors. Now some consider our current Earth to be the second Earth. Meanwhile Jupiter and other massive planets have migrated outward; but we all are still under the control of our much more massive birth star.

Stars and planets were long thought to go together like peanut butter and jelly in sandwiches. However, the emerging population of planetary-sized bodies not associated with stars has generated novel questions as yet unanswered by old conventional theory.

In 1997 I wrote about life on dark planets.**[2]** I may have been one of the very first astronomers to examine this possibility. Three years later, "isolated planetary-mass objects (iPMO) were first discovered in 2000**[3]** by the UK team Lucas & Roche with UKIRT in the Orion Nebula."

The fairly new model of sufficiently large spherical bodies with hot interiors keeping their surfaces warm, is logical. Indeed, the famous first JWST image of Jupiter depends on this instrument's ability to see into the infrared – which is the same visually unseen frequency phenomenon that we daily experience as heat when we first start up electrical stoves. The knowledge that chlorophyll does not power life at lava tubes near deep ocean vent cracks allows for life forms to arrive from anywhere else.

A "dark" planet can thus either be a castaway – or it can alone condense out of dusty baryonic matter, plus incoming dark matter that dialectically becomes baryonic matter. Gas dynamics theory does not easily support the self-generating-planets thesis within regions of seemingly "empty" space. A critically needed upgrade to the century-old physics model would now allow self-generation of numbers of “rogue” planets within seemingly empty or ethereal regions of our Milky Way.

Once one planet forms “out there,” others sufficiently nearby may interact gravitationally in ways that can yield two or more planets to mutually orbit. Even now in our distant solar system Pluto and Charon are considered to be a dual-planet system, not one planet with a large moon. Pluto and large Charon share a gravity center that is between them. Earth has a large orbiting moon, but their common gravity center is within the Earth.

Binary stars are very common, and much beloved by amateur astronomers who like to visually split them. Many more multiple stellar systems can also be identified and described by spectrum analysis. The story gets much more interesting when there are more than two mutually orbiting stars (or planets).

In physics there is discussion of *the three-body problem*. Three or more bodies by themselves, and not under the gravity domination of a massive central star, are hard to model. This may help explain why we don’t see large numbers of multiple stars and planets orbiting around each other, absent a much more massive normal star or black hole that harmonizes oscillations.

Physicists have detected large “rogue” planets with enough mass to emit deep infrared frequencies that the JWST can see. They have yet to easily model how such planetary systems exist.

There is another layer of mystery beyond the mere existence of one or more gravitationally associated rogue planets. Recent discoveries by the JWST**[4]** have prompted more consideration of the orbital physics between two orbiting planets, and among three (and more) planets. It’s one thing to model a stellar-centric planetary model for several associated planets. It is much more complicated when those orbitally associated planets have no controlling central mass.

Star-less planetary orbiting triplets may not yet have been identified, likely because such orbits would be unstable. They may emerge with new data. Triplet or more orbiting planets should be considered special cases of the more general three-body problem.**[5]**

I speculate that among the small population of mutually orbiting three-or-more stars there is at least one gravitationally dominant stellar-mass black hole in their mix. Here is an astrophysics search opportunity within today's technologies.

Solar systems such as ours have multiple orbiting planetary masses, and no hidden black hole. Our solar system has one harmonizing supermass, and its planetary masses orbit it, making it all somewhat like a two-body system. Among dual planets together without a central star, there is typically no supermass. Among 3+ mutually orbiting planets there could be a smaller solar-mass black hole providing gravitational harmony.

Creating Planets Without Stellar Dust Clouds

Here is an European Space Agency quote from reference citation #4 above, indicating where emerging dark-planet formation data science is today:

> "Gas physics suggests you shouldn't be able to make objects with the mass of Jupiter on their own, and we know single planets can get kicked out from star systems. But how do you kick out pairs of these things together? Right now, we don't have an answer. It's one for the theoreticians," the European Space Agency's senior science adviser told BBC News."

Earth's origin is common, at least to our means of detection. It has yet to be determined if Earth's type of origin is usual or atypical within the Milky Way. I guess we were born "normally," but the data is not yet clear. Dusty nurseries are also nurseries for the likes of Earth, and even for more massive rogue stars with or without their own planets.

Current science has detected nursery solar siblings that were forming 4.6 billion years ago. I wrote in 2014 about the star I call Stella**[6][7]** that was the first detected from our shared nursery.

NASA has a cozy formation model for planets,**[8]** and does not seriously entertain the logical reality of planets forming outside this model. Theirs is the same model that the ESA uses. So far so good – until we model planets outside the gravitational pull of local stars. How did such planets form and persist in mutual orbit for so long?

Current theory leans toward planets and some stars being cast out of dusty forming star systems, which is probably how Stella was evicted from Sol's home dust cloud. Nevertheless, the question of how planets may form apart from local dust clouds – and then find each other in pairs – is not settled. Gas theory indicates that we need sufficient dusty particulate mass, not just ethereal gas, to create rocky planets. Why are there a possibly huge number of rogue planets, some in pairs, within our home Milky Way, and most likely beyond throughout deeper space?

A correlating model that harmonizes within the properly upgraded model of push/shadow net gravity physics is detailed within several essays inside my "Clark's Web Pages" section of astronomy-links.net.**[9]** The original and highly flawed impactor version dates back to Fatio in the 17th century, and was only fully refuted in the 19th century, not long before GR emerged.

We need a proper modern theory valid within all logarithmic linear *physics dimensions* (not just within so-called *math dimensions*), including the smallest ones we cannot yet instrumentally see, yet still associated with all physical planetary formation.

The modern paradigm, powered by electromagnetic aspects of individual spherical yin/yang particles, most efficiently fits "rogue" planet formation models that have perplexed antique physics' GR ideas. Visible dust is in mostly baryonic "normal" matter. We can detect this matter type both gravitationally and visually.

There is much more gravitational dark matter "out there" than baryonic dust. Space is not at all empty in matter and energy. As Aristotle said, "Nature abhors a vacuum." Our fleshy bodies are penetrated unknowingly to our senses by trillions of "dark quanta" (individual yin/yang units from every multiversal direction) every second. Earth itself is easily penetrated by very tiny solar neutrinos over a dozen logarithmic linear dimensions *larger* than individual "quantum sea" mass/energy spherical particles. Do you now envision how there is more logarithmic space below us than above us?**[10]**

Those mass/energy particles are what I call yin/yang spheres, and we naively imagine that they operate alone purely randomly, almost as if they can ignore the laws of physics other than gravity. Here is an *as-if* quantum dynamics physics model, not the correctly elegant 21st-century paradigm that is emerging.

The "quantum sea" is by diffusion a ubiquitous space filler. It has uncountable yin/yang units. Early Quantum Mechanics (QM) is more particulate than the later concept of Quantum Field Theory (QFT). Separate quantum models, taken with the General Relativity (GR) idea of spacetime branes, have inspired some theorists to try, with minimal success, to merge antique quantum theories and relativities.

Elegant astrophysics includes mass/energy "quantum" units (yin/yang spheres) that only appear to be random, and in fact freely join together in real 3D beaded strings, *the real strings*. Combining associated yin/yang units and complex aggregations upward to the level of "classical" baryonic physics yields in *dialectical* form what we know as planets. We don't need dense local stellar dust clouds to make all planets; but how?

The distribution of yin/yang matter/energy “quanta” is not purely random and smooth within “empty space” as we know it. On our visible 4D universal scale, both baryonic matter and “dark” matter can be associated with Coulombic magnetic fields extending many millions of light years.

Standard net push/shadow gravity is still an impactor aspect of universal forces at sub-Planck scales, mostly in the form of short beaded strings. We can see the dual forces of electromagnetism and correct gravity, along with Coulombic magnetic forces within each yin/yang sphere. Within the apparent randomness of each 4D yin/yang sphere and its associated 4D beaded strings – are the emergence of much larger structures such as planets, and all the way up to the whole 4D Multiverse itself.

Linked herein are two very important images of what science has recorded of our local universe’s magnetic connections.**[11]** Yin/yang spheres all have both primary and dipolar magnetism, and matter therein, capable of sophisticated relations among each other. Each fundamental spherical unit is held together by powerful Coulombic forces. Planets and even galaxies can and do form along these magnetic highways, and especially at their intersections. Dust and dark matter does collect along these lines, but there is no known correlation as to quantities of dust and numbers of planets. This mass-highways-in-space model may seem weird, until we consider how the Earth’s surface is populated with many cities at intersections of commerce.

We have come a long way from rubber sheets in physics class. The pristine journey toward Truth is amazing and wonderful.

References

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[2] https://astronomy-links.net/Dark_Life.html

[3] https://en.wikipedia.org/wiki/Rogue_planet

[4] https://www.bbc.com/news/science-environment-66974738

[5] https://en.wikipedia.org/wiki/Three-body_problem

[6] https://astronomy-links.net/SolarSister.pdf

[7] https://en.wikipedia.org/wiki/HD_162826

[8] https://science.nasa.gov/exoplanets/how-do-planets-form

[9] https://astronomy-links.net “Clark’s Web Pages”

[10] https://astronomy-links.net/neutrinos.and.photons.pdf

[11] https://astronomy-links.net/magnetism.and.gravity.pdf