

"In 1984, she introduced the now-standard theory of dark matter with theoretical physicist Martin Rees of Cambridge as well as particle physicist Joel Primack and astronomer George Blumenthal, both of Santa Cruz. Invisible matter, they said, consisted not of neutrinos, which were considered 'hot', but of 'cold' dark stuff."

-SANDRA FABER  
(Bagne 1990:62)

"Einstein was the first person to see that the geometrical rules which apply to one small part of the universe as seen from a limited perspective (like ours) are not universal. This freed him to behold the universe in a way that no person had seen it before."<sup>1</sup>

-THE DANCING WU LI MASTERS  
(Zukav 1979:182)

## 10. SATURN AND LEVELS OF LAW

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<sup>1</sup> I'm not sure Zukav is correct when he states that Einstein was "the first person to see" this, but regardless, he makes an important point that the universe needs to be viewed from a non-geocentric point of view. Sounds like Copernicus all over again, though without the censure of the Romish church.

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### INTRODUCTION:

It is axiomatic in LDS theology that there is a set of laws that govern the operation of the universe. The creation of this earth was an example of the operation or application of those laws. There is a famous quote from the D&C states that there are laws established before the earth was created which govern blessings<sup>2</sup>. What these blessings are isn't stated, but here it is assumed that all things that result from the operation of laws of heaven, which are expressions of the white priesthood, fall into the category called "blessings".<sup>3</sup>

Our understanding of the manner in which priesthood translates into natural laws like gravity is poor. How can gravity be related to -equivalent to- the power which heals sickness or which prophecies? SMD offers no explanation of this relationship. Indeed, SMD isn't even explicit in stating that there is such a correlation, but if laws govern everything, and if laws are somehow extensions or expressions of the priesthood, then gravity is a sister to healing and prophecy, and it is related to the law of tithing, baptism and temple ordinances, etc.

### MORE THAN ONE LEVEL?

While rummaging around in SMD, one gets the impression that there may be different levels of law, at least of ecclesiastical law. The concept of levels of law is not generally applied to physical laws. The term "levels" generally refers to 'higher' versus 'lower' types of law, for example the Christian Law in contrast to the Mosaic law. Within SMD, this distinction could be used to refer to different sanctioned life styles, for example the United Order versus non-United Order life styles, etc.<sup>4</sup> SMD also refers to "higher" or "lower" laws, higher priesthood and lower priesthood, etc. These notions are incorporated here as valid examples of different levels of liturgical law. By extension, if

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<sup>2</sup>"There is a law, irrevocably decreed in heaven before the foundations of this world, upon which all blessings are predicated - And when we obtain any blessing from God, it is by obedience to that law upon which it is predicated." (130:20-21)

<sup>3</sup>See chapter 23. BLESSINGS for details about the meaning of blessings in this model. The term obviously will not be used to refer to the consequences of the application of the black priesthood. We are not sure what term to use to refer to the later. Curses? Maledictions? Imprecations? Execration? Anathema?

<sup>4</sup>The United Order was an attempt in early LDS history to implement a utopian society, a la New Harmony and other doomed-to-failure-from-the-start utopian societies. (Is my bias evident?) Once more, Dr. M. Backman's assertion is correct, that early LDS religion was affected by, or took advantage of, its social and cultural milieu. This doctrine remains on the books, but is not implemented, because we are not capable at present of complying with this "higher" law. The implication of an unimplemented United Order law is that there is some sort of hierarchy of spiritual laws. The corollary, then, that we explore here would be that there may be a hierarchy of "physical" laws.

those types of laws, which might be termed "religious" in nature, have levels, then the related "physical" laws may also have levels. Note the quote above about Einstein. In it, Zukav makes the point that Euclidean geometry is not true in all settings, which required that different types of geometry be developed.<sup>5</sup>

In searching for candidates of "different" levels of physical law, meaning different from what we know on this earth, we suggest looking at the bizarre phenomena discovered by Voyagers 1 and 2 in their flybys of Jupiter and Saturn in 1981 and 1982. Among the fascinating phenomena encountered in those flybys are things in the realm of orbital mechanics which appear to contradict the behavior of matter in what appear to be analogous conditions on this earth. The laws developed to describe the behavior of matter and forces in atmospheric conditions on earth are inadequate to account for these bizarre phenomena. Let's explore this concept of levels of natural law first by using examples of terrestrial orbital mechanics and then compare them to examples from Jupiter. There are clearly differences, but the unanswered question is: do the two contradictory sets of data belong to different levels of natural law, or is one a subset of the other, the larger set being simply not understood by mortals?

#### KRAKATOA CATAclysm:

On August 27, 1883, a stupendous volcanic eruption occurred on a small island named Krakatoa, which is located in the archipelago southeast of India, adjacent to Jakarta and Sumatra<sup>6</sup>. The noise produced by this explosion was so loud that it was heard hundreds of miles away in Australia. It is estimated that the explosion of

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<sup>5</sup> The simplest proof that Euclidean geometry doesn't apply in all situations, even on the surface of our earth, derives from a triangle drawn on a sphere. You know that the sum of the internal angles of a two-dimensional triangle equal no more nor less than 180 degrees. Right, obtuse, oblique, they all contain 180 degrees. This suggests that a triangle drawn on the surface of the earth will have 180 degrees. But to show you that Euclidean geometry fails sometimes, think about this example of a triangle, i.e. a figure consisting of three sides, which contains more than 180 degrees. (If you've done this already, disregard this note.)

From the true north pole of the earth, drop a perpendicular through Greenwich, England down to the equator. The north pole is now the apex of a triangle, and this perpendicular through Greenwich is altitude, with the equator being the base. Now move 90 degrees eastward along the equator from the Greenwich line and erect another perpendicular at that point on the equator back up to the north pole. This side will almost pass through Dacca, Bangladesh. We now have a triangle with the equator as the base and two sides erected on the equator, converging at the north pole.

Now look closely at this triangle. Note that each of the legs of the triangle erected on the equator forms a right angle with the equator. This means, then, that the internal angles for those two corners of the triangle each contain 90 degrees. And since we separated the two legs at the north pole by 90 degrees, we have a triangle with three 90 degree angles. This totals 270 degrees. In Euclidean geometry this is impossible.

Curved surfaces that are three dimensional in nature behave differently than, or have different properties than do flat surfaces. So different laws -geometries- are needed, and have been developed by various individuals, two of the more famous being Riemann and Lobachevsky. In a narrow sense, these two types of geometries might be considered to be different classes or types of law, though it is not possible to term one "higher" than the other. But for this discussion, the distinction is appropriate.

<sup>6</sup> This event became part of the cultural history of people in that region, for example, the Land Dayaks of Sarawak. Geddes reports about Grandfather Inchau, the leading politician of Mentu Tapuh:

"He was born, he said, 'on the morning after the day on which the world shook.' The event which shook the world and heralded Grandfather Inchau's birth was the explosion of Krakatoa, and it took place in 1883." (1961:64)

this small island, which was nearly destroyed, expelled five cubic miles of matter into the atmosphere. This stuff was blown seventeen miles vertically. The collapse of the ocean into the depression created by the loss of the bulk of the island was the force which produced a massive tsunami, 120 feet high. This wave was projected with such enormous energy that it carried completely around the African continent to eventually be detected in England. This tidal wave washed over nearby Jakarta and Sumatra with devastating force, destroying enormous amounts of costal property, and killing approximately 36,000 people.

The point of this little story has to do with the ejection of the earthen debris into the atmosphere. As you would expect, based on your personal experience with dust devils and such, the larger material quickly fell back into the surrounding ocean. But the volcanic ash, with the consistency of fine talc, was picked up by high altitude winds, and was subsequently dispersed around the world over the next few months. That probably doesn't surprise you, either. It was eventually distributed uniformly around the globe at those altitudes, producing a generalized haze that partially blocked sunrays for several years, lowering world temperature half a degree fahrenheit for that same time period. Eventually, however, the dust precipitated out of the atmosphere and was generally distributed around the world. Today, the winds located between 15 degrees north and 15 degrees south in that part of the world are even called "Krakatoa Winds" and blow at 55-110 MPH in a westerly direction.

The critical point from this story is the fact that these winds distributed the fine dust uniformly across a wide range of latitudes and altitudes around the world, after which it eventually settled back to the surface of the earth. This is consistent with our general experience with dust on earth. It persuades us that dust will behave this way anywhere dust can be suspended above the surface of any planet which generates a gravitational field. We would not expect dust to behave any differently. Cyclones and dust storms reinforce this belief.

#### SATURN AND JUPITER SURPRISE:

But when we look out into our own solar system, which is like the house next door, as far as cosmic distances go, we are astounded. On Jupiter and Saturn, in startling contrast to the story just told, dust above the surface of the planets is NOT uniformly distributed in the 'atmosphere'. Nor does it eventually fall back to the surface, even though the planets both exert considerable gravitational forces. The dust, some of which isn't even fine, is confined into narrow bands, which maintain their geometrical integrity around the planets. We all know of these rings, which are beautiful to see through a telescope, but their behavior disagrees fundamentally with the 'natural laws' that describe the behavior of small particles surrounding earth, as in the Krakatoa incident.

Various arguments have been advanced by astrophysicists in attempts to explain this anomalous behavior. But no suggestions that are based on terrestrial mechanics suffice. For example, at one point, the absence of a true atmosphere on Jupiter was suggested as the reason for the rings. This doesn't explain why matter can be formed into coherent bands that retain their shapes, nor does it explain why the matter is held up away from the surface of the planet in spite of planetary gravity, without eventually settling down to the surface over time. Nor does it explain why the dust stays in any particular configuration, narrow bands or otherwise. Orbital mechanics as manifested on earth are totally contradicted by these phenomena. The uniform distribution of dust, as in the Krakatoa example, which subsequently settled back to the planet's surface just hasn't happened.

As if these differences weren't enough, there are other equally problematical observations. In addition to the remarkable narrow, persistent bands, there are peculiar things like shepherd moons that exist in pairs and which appear to remain in a particular rings. These small moons appear to move forward and backward, toward and away from each other, in their given ring. It appears that they somehow "keep" the matter of the band in place, hence the name 'shepherd'. Equally astonishing is the manner in which some rings appear to cross each other, giving the impression of being "braided". Other rings appear to be transected by shafts or columns of matter that radiate vertically from the planet surface extending upward through the rings, in the manner of the spokes of a wheel.

#### TORUS, OR PILLAR BY DAY:

To this author, the most stupendous thing in the Jovian world that appears to be an aberration within the context of the laws of this earth is the tube of high intensity electrical energy, termed a torus, that is found on its famous satellite Io. This high-power energy band is difficult to grasp or believe in, given its absence on the earth<sup>7</sup>. Nothing locally prepares us for such a peculiar thing as a tube of energy manifested as an arc of energy touching two locations on the surface of the moon Io<sup>8</sup>. It remains in place over the surface of the planet, exerting tremendous force.

#### LEVELS OF LAW?

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<sup>7</sup> That is, nothing prepares us for this concept, unless we are literal enough to believe in an actual Israelitish Pillar By Day in the wilderness. In that case, there is at least a weak candidate for the Jovian torus. Otherwise, zip.

<sup>8</sup> Indeed, physicists would perhaps be overjoyed at such a prospect. The massive, expensive, high-energy particle accelerators (extending up to 50 miles in diameter) are attempts to produce high energy tubes of particles.

Now how do we accommodate all of this astonishing empirical data from Jupiter with the laws of the earth? Are these examples of different levels of 'physical' law? In view of the Krakatoa data, and in the absence of the Jupiter data, scientists would have discounted predictions of such behavior. Yet copious, irrefutable evidence of these contradictory-appearing behaviors exists, and it is being dealt with by astrophysicists and such as deal with such phenomena.<sup>9</sup> It appears to a layman that as they work to that end, they make the assumption that the phenomena out there can be accommodated with that of earth, that a uniform code of laws will be discovered.

Practically speaking, that assumes that there is only one level of law. But this may be a consequence of the scientific model, which makes that tacit assumption. They do not, nor can they, entertain the notion of different levels of law<sup>10</sup> within their scientific method. To do so, would be to incorporate the seeds of confusion. So far, the scientific method has eventually accommodated most empirical data, though some sometimes flummery was used.

#### PRECESSIONS AND MUSIC OF THE SPHERES:

As an example of the latter, take this interesting footnote from history. This story pertains to the inability of science to explain what it currently observes in the solar system, and comes from the 1600's. Scientists with the best training and equipment that was available at that time, studied the movement of the planets through simple telescopes. Recall the geocentric theory was just being supplanted by the solarcentric model, which placed the pivot of our planets inside the sun instead of earth. At that time, scientists were coming to believe that planets moved in circular orbits around the sun<sup>11</sup>. However, as precise observations were made of the positions and apparent speed and motion of the planets, it became evident that there was a problem. If the orbits had been completely circular, thereby being examples of true periodic motion, the apparent speed should have been predictable,

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<sup>9</sup> In a January 1980 NATIONAL GEOGRAPHIC article, Bradford Smith, the imagining-team leader for the Voyager fly-bys, said:

" All our theories on the Jovian atmosphere have been shot to hell. We are like students going into an exam thinking we know all the answers and then going blank. We just don't know what to make of it."  
(1980, Jan., p.11)

Scientists have now recovered their equanimity, and have advanced hypotheses to (attempt to) explain these phenomena. But Smith's statement captures the true experience of shock when these astoundingly contradictory phenomena were first discovered. The hypotheses will be difficult to verify because experiments cannot be setup on earth to test them.

<sup>10</sup> Obviously, we have a problem of definition here. What constitutes "level of law"?

<sup>11</sup> They also believed that as these planets moved, they produced an ethereal music termed "Music of the Spheres", which music was, unfortunately, never proven to exist. Lovely idea that no doubt led to considerable late night listening by lingering lotharios and lovelies.

consistent and observable at all points of each planet's orbit. There appeared, however, to be a slowing down of some planets in certain segments of their orbits. This slowing down, like the 1980 rings, shepherd moons and the torus on Jupiter, had to be accommodated in some manner. So astronomers postulated peculiar non-circular motions, termed precessions, for those planets which didn't move in the pattern expected for circular orbits.

These little gimmicks<sup>12</sup> were eventually shown to be unnecessary by the simple discovery that some planetary orbits were elliptical, rather than circular. To an observer standing at a point within an elliptical orbit, a body moving along that orbit will appear to move at different speeds at different points in its orbit. This explanation developed into a tidy solution to this knotty problem that was beyond the understanding of science at that stage of development. And the precession gimmick was dropped. But to those early astronomers, the orbits didn't appear to obey the laws of this world, so they made up a fudge factor<sup>13</sup>.

#### CONCLUSION:

The second quote at the top of this chapter suggests that there are different types of physical law. At least a portion of the difference in perception and understanding that imply different levels of law derives from the degree of sophistication of the science collecting and evaluating the evidence. As science progresses, previously unknown generalizations are discovered, that include and explain broader ranges of evidence. This is predictable by the SMD claim that there is one force governing everything. If there truly is one ruling force, then all phenomena will reduce to one level of law, even though at present the relationships cannot be deduced<sup>14</sup>.

The problem with this statement is the doctrine of a higher and a lesser priesthood, the Melchizedek and Levitical. They are both priesthood of God, and if He terms them higher and lesser, then perhaps they are. In a simple minded sense, then, we will adopt that position because it is part of the canon, but will intellectually demur pending proof.

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<sup>12</sup> Einstein himself, to his eventual regret, resorted to such a gimmick at one point in his career by introducing his "cosmological constant". We can't help speculating that the first 'explanations' for the rings, shepherd moons and torus may well be based on gimmicks, which will eventually be supplanted with the 'truth' (ha).

<sup>13</sup> The Jovian situation is analogous, and 'truly' scientific explanations will eventually be discovered.

<sup>14</sup> This, then, raises a curious issue: why does the canon refer to the Aaronic grades of the priesthood as a "lesser" priesthood? If SMD preaches that the priesthood of God oversees all, then any expression of that priesthood is still representative of the priesthood of God. So while there may be grades or degrees within the priesthood, there is still only one priesthood of God.

There is, in fact, evidence from Joseph Smith that he believed in three, not just two, priesthoods. This third type was termed the Patriarchal Priesthood, and is the type held by patriarchs. When I tried to press this concept with a member of the LDS clergy (a paid institute director), of three priesthoods, I was fervently corrected, and was told that there were only two types, that when Joseph referred to the Patriarchal Priesthood, he did not mean what he said. Not an unusual tactic for insecure people or narrow minds. Just reinterpret things as needed to maintain whatever one wishes to believe.