

APPENDIX D

Experimental Demonstration of Gravitics Effects

THE EXPERIMENTS IN GENERAL

Gravitation is caused by propagating U-waves which are naturally radially outward from the gravitating mass. In the case of the Earth that propagation at any location on the Earth's surface consists of essentially parallel rays all directed upward. This analysis presents experiments to demonstrate modifying the natural behavior of gravitation by using a cubic crystal to scatter gravitation-causing U-waves away from their straight up pre-scattering direction.

These experiments consist of using a cubic crystal slab tilted properly to increase rays of gravitational U-wave flow passing near enough to the atoms of the crystal lattice so that a large proportion of those rays are deflected enough, [scattered to directions other than upward] so that their net gravitational action on masses above them is reduced.

REQUIREMENTS FOR THE CUBIC CRYSTAL DEFLECTOR

Per the calculations of Section 4, a silicon monolithic cubic crystal slab *49 cm* thick or more should result in 100% deflection. A slab 10% of that thickness, *5 cm*, could be expected to produce detectable deflection and perhaps as much as about 10% deflection.

Common commercially produced silicon cubic crystal wafers are on the order of *600 micro-meters [0.6 mm]* thick and up to *30 cm* in diameter. Using commercial wafers of that type would be impractical given the actual requirements.

Therefore a single thick slab is needed but would be special rather than commercially produced. Such slabs exist in the process of manufacturing the common commercial cubic crystal wafers in which the thin wafers are sawed from a large single silicon cubic crystal.

With regard to the distance from the top of the cubic crystal deflector to the bottom of the object above it, the greater that distance is the more effectively reduced is the gravitational U-wave flux acting on the object because the scattered rays of gravitational U-wave can more effectively disperse as they have more distance to travel to the vicinity of the object.

The deflector set-up consists of [see details in Appendix B]:

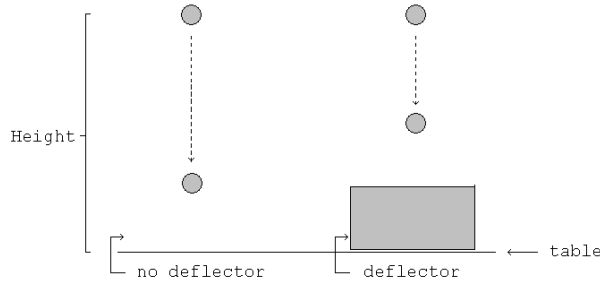
- A support having a verified horizontal upper surface for the cubic crystal deflector;
- A cubic crystal slab of suitable dimensions, the deflector;
- Calibrated spacers for producing calibrated tilt of the slab.

EXPERIMENTS TO DEMONSTRATE VALIDITY OF THEORY

Experiment #1 – Demonstration of Gravitation Reduction

This experiment demonstrates the causing of gravitation reduction by gravitic deflection.

It consists of simultaneously dropping two identical small objects, one over a cubic crystal deflector and the other in unmodified Earth gravity. The one falling over the deflector experiences reduced gravitation and falls more slowly than the other. Figure B-1, below illustrates the experiment.



*Figure B-1, Experiment #1
Distance of Fall in Same Time Interval*

The experiment is conducted using two sheets of ordinary paper each crushed into a coarse ball. Table B-2, below presents sample results.

	Reference [Left] Object	Gravitation-Reduced [Right] Object			
Acceleration Downward [meters/sec ²]	9.81	4.91	1.96	0.98	0.49
% of Normal Gravitation	100	50	20	10	5
Fall Time [seconds] for 1 Meter Height	0.45	0.64	1.01	1.43	2.02

Table B-2, Experiment #1 Sample Results

COMMENTS BEARING ON THE PROJECT

[1] Why has the underlying principle or technology not already been discovered by research ?

- “Research” and researchers have no knowledge of Universal Physics as developed in *The Origin and Its Meaning* nor of the mechanism of gravitation.

[2] Why has the underlying principle or technology not already been discovered serendipitiously ?

- Such a discovery would require simultaneously:
 - A slab of cubic crystal that is, sufficiently thick and of sufficiently correct “tilt” orientation relative to the U-wave upward gravitational field, plus

GRAVITICS

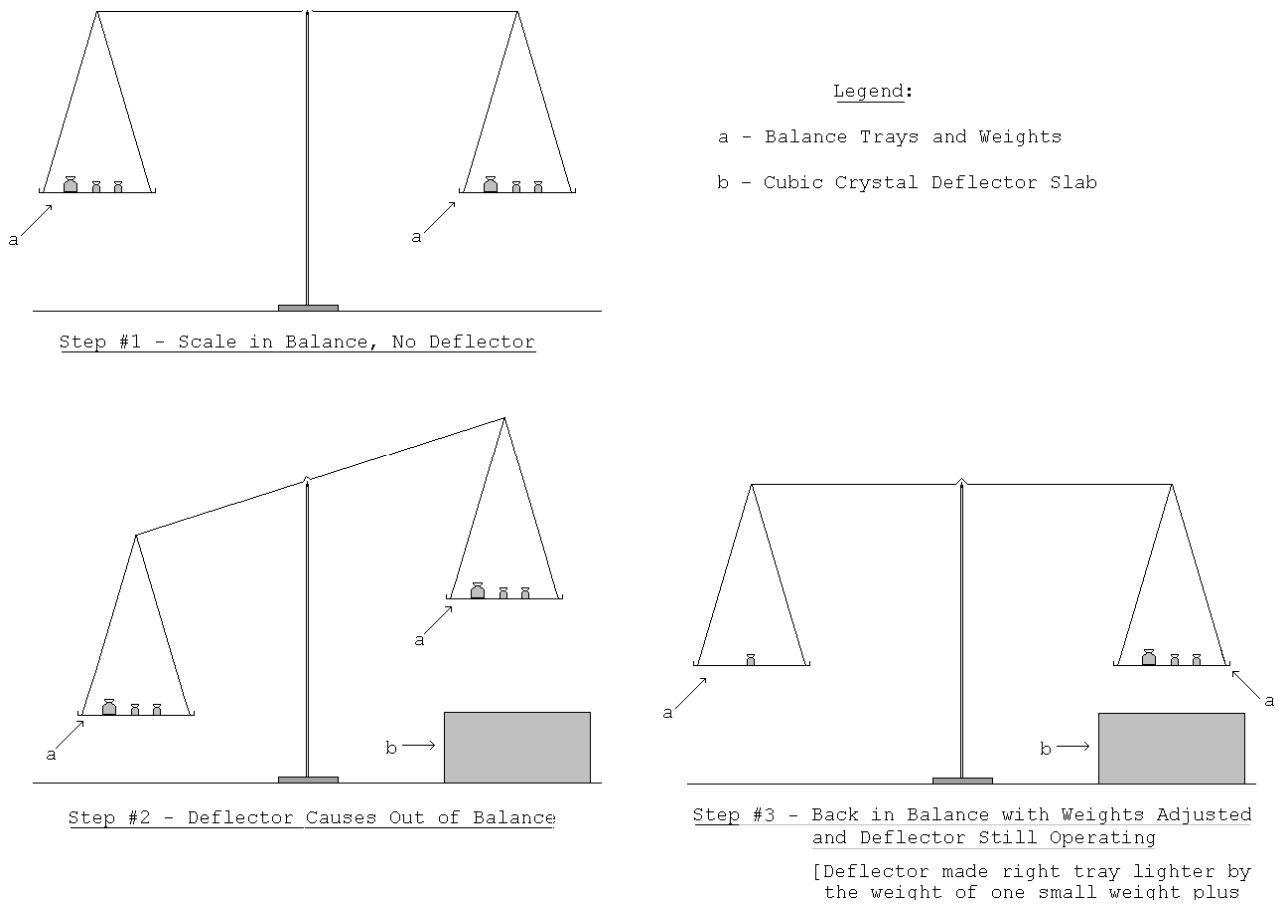
- Something above the slab exhibiting a reduction in its gravitational attraction downward, plus
- What could so occur would only be a partial reduction of gravitation and unlikely to be so noticed.

[3] Why has the effect not been noticed in the manufacture of silicon wafers for integrated circuits or the associated research or in x-ray crystallography in general ?

- Occurrence of the conditions in [2], above, in a silicon wafer chip research or manufacturing facility's operational context or in x-ray crystallography in general where a noticeable reduced gravitational attraction downward in the air above competes for being noticed against the focus of attention on the chip for its research or manufacture purposes is unlikely.

Experiment #2 – Controlled Local Gravitation Reduction with a Cubic Crystal Deflector

This experiment measures the amount of the gravitation reduction caused by a gravitic deflector by measuring the weight reduction it causes. The experiment set-up is per Figure B-3, below.



**Figure B-3,
Experiment #2 Set-Up**

The experimental set-up consists of:

- A balance scale and set of calibrated weights for it;
- A deflector as already described above.

The procedure and results are made clear in the figure. Introduction of the cubic crystal deflector reduces the weight of the right balance tray and weights, above the deflector, to less than their natural Earth-surface weight. The mass of the tray and weights is unchanged. The difference in the weight is due to reduction in the gravitational downward acceleration in the region of the right tray above the gravitation deflector.

Then, removing weight from the left tray restores the balance and measures the magnitude of the weight reduction caused by the deflector.

Experiment #3 – Energy From The Gravitational Field

Experiment #2 demonstrates extraction of energy from the gravitational field in that the potential energy of the right tray and weights is increased as demonstrated by their fall when the cubic crystal deflector is removed. However, the following is a more explicit demonstration of extracting energy from the gravitational field. The experimental set-up is as in Figure B-4, below.

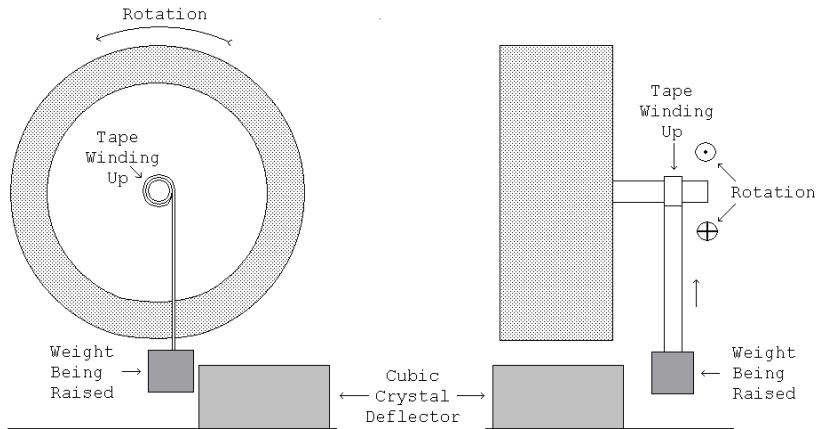


Figure B-4
Experiment #3 Set-Up

Experiment #3 uses the effect of Experiments #1 and #2 to make the right half of a symmetrical wheel weigh less than its left half so that the wheel is forced to rotate. The rotation is arranged so that it raises a weight by winding up around the wheel's axis a tape attached to the weight. The increase in elevation of the weight in the Earth's gravitational field is an increase in the weight's potential energy. That increase comes from the gravitational imbalance acting on the wheel.

EXPERIMENTS TO DEVELOP DESIGN DATA

These consist of various experiments using setups similar or equivalent to Experiment #2 but designed to investigate various aspects and parameters of gravitic deflector operation. These would include investigating:

- Variation of deflector efficiency with thickness of the cubic crystal;
- Variation of deflector efficiency with tilt angle of the cubic crystal;
- Magnitude and affects of the rays of gravitation diverted to the sides of the deflector;
- Various other factors affecting the devices such as
 - temperature,
 - material of the crystal,
 - doping of the crystal,
 - the assembly together of a number of crystals cut to a hexagonal horizontal cross-section so as to obtain a continuous large area deflector,
 - the assembly of multiple crystals stacked vertically to obtain greater effective crystal thickness than is practical to grow in a single crystal,
 - and others.