

## The Structure of Baryons

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I want to thank all the people at the General Science Journal who have helped me describe these ideas.

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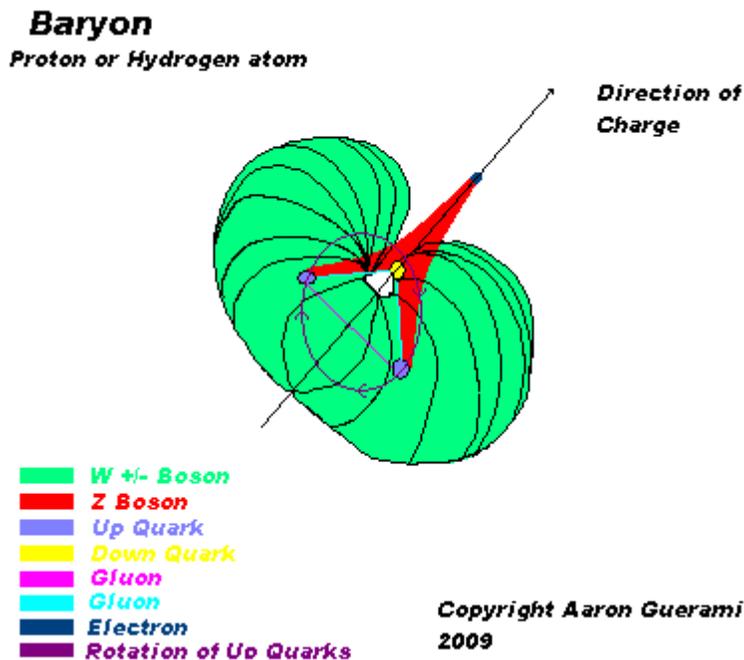
Abstract: This paper will describe the structure of baryons. This paper will describe the bosons, quarks, and certain leptons.

Three Generations of Matter (fermions)

	I	II	III	
mass	2 MeV	1.24 GeV	172.5 GeV	0
charge	$\frac{2}{3}$	$\frac{2}{3}$	$\frac{2}{3}$	0
spin	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	1
name	u up	c charm	t top	$\gamma$ photon
Quarks	6 MeV $-\frac{1}{3}$ $\frac{1}{2}$ d down	95 MeV $-\frac{1}{3}$ $\frac{1}{2}$ s strange	4.2 GeV $-\frac{1}{3}$ $\frac{1}{2}$ b bottom	0 0 1 g gluon
	<2 eV 0 $\frac{1}{2}$ $\nu_e$ electron neutrino	<0.19 MeV 0 $\frac{1}{2}$ $\nu_\mu$ muon neutrino	<18.2 MeV 0 $\frac{1}{2}$ $\nu_\tau$ tau neutrino	90.2 GeV 0 1 Z <sup>0</sup> weak force
	0.511 MeV -1 $\frac{1}{2}$ e electron	106 MeV -1 $\frac{1}{2}$ $\mu$ muon	1.78 GeV -1 $\frac{1}{2}$ $\tau$ tau	30.4 GeV $\pm 1$ 1 W <sup>±</sup> weak force
leptons				Bosons (Forces)

by PBS Nova and Fermilab

The above chart has helped in describing the fundamentals of baryonic structure. It describes the bosons, quarks and leptons.



### The Baryon:

Baryons are described as any vibration that has 3 quarks [1]. Adding to that each baryon must have 3 gluons connecting the quarks. Each baryon also must contain a Z boson and a W boson. A baryon uses electrons to emit and receive photons and to transmit charge. A baryon is a system of vibrations. The baryon also has asymptotes that describe the polarity of the baryon.

There are 6 types of quarks. Each type of quark is described as a flavor [2]: Up(u), Down(d), Strange(s), Charm(c), Truth(t), and Beauty(b). Truth and Beauty are also named top and bottom. That nomenclature is too close to Up and Down and may cause confusion. The properties that describe a quark are: Upness, Downness, Charmness, Strangeness, Truthiness and Beauty.

Each baryon is identified by 2 of one type of quark along with 1 of another type of quark. For example a proton consists of Up Up Down (uud), and a neutron consists of Down Down Up (ddu) [3]. The model pictured above is a proton or hydrogen atom (uud).

The baryon is naturally asymmetrical. This helps describe the general asymmetry of the universe. While the atom is in motion, this asymmetry causes error. Error causes pattern.

### The Bosons:

The bosons are the forces. All bosons are waves. Forces express energy. There are 4 bosons.

- Gluon (g) – The strong nuclear force.
- W+/- Boson (W+/-) – The magnetic force.
- Z Boson (Z) – The electric force and data transfer.
- Photon ( $\nu$ ) – The temperature force.

Each boson is a system of information expression of the baryon's physical properties.

Information table:

Gluon	Voltage	Color	Length	Spin
Photon	Wave Length	Frequency	Temperature	Spin
W+/- Boson	Charge	Current	Voltage	Spin
Z Boson	Current	Electron data	Photon data	Spin

The Gluon:

The gluon is the most important vibration in our universe. It communicates information to all other systems of vibrations with bosons. All information communication is essentially gluon to gluon communication by using direct communication or with another boson. Simple Gluon to Gluon communication is facilitated through quantum chromodynamics (QCD).

The three gluons make up the nucleus of the baryon and are the quarks. Two gluons intertwine to make a quark. So a quark is just the interaction of two gluons. The three gluons that form a baryon are always in the form a triangle. The baryon's gluon triangle forms the basis for trigonometry. This adds to the general asymmetry of the universe.

Gluons use certain bosons to communicate different bits of information to other gluons. The type of information determines the type of vibration used to communicate that information. The bosons are the vibrations that transmit information. The gluons process and express information. The quark parts of the gluon are for storage of information for future use.

The W +/- Boson

W boson is magnetism which is emitted from and read by W boson. The W boson's intensity is related to the rotational speed of the similar quarks. In the case of a proton (uud), the 2 u quarks spin perpendicular to the line the d quark lies, which is the direction of charge. The faster the rotational spin, the more intense the W Boson. The Voltage = the rotational speed.

The W boson is the only vibration with a charge. The W boson is a long distance vibration. The W boson is responsible for pushing against dark matter creating a baryonic bubble.

The Z Boson

Z bosons are responsible for electric fields. The Z boson transmits information from the gluon to the electron and back again. In conductors the Z boson knocks electrons from their orbit. In that, a Z boson is responsible for changes in the electron's distance to the nucleus. This strength in its field is a measure of the intensity of the information that the Z boson carries.

The information the Z boson carries is the baryon's current and two compressed datasets for the electron. The first dataset is so the electron can create a photon; temperature, wavelength, and frequency of the quarks. The second dataset contains information for the electron; current and voltage of the quarks.

In normal conditions the electron sits on the tip of the Z boson. If the current of the Z boson is too strong the electron gets ejected and travels through a conductor to another baryon. This is electricity. If the current is so strong the Z boson will eject the electron and extend to connect with another baryon. This is plasma.

### The Photon

The photon is a Reiter wave [4]. The photon is the expression of the temperature of the baryon. Using Planck's Spectral Energy Density for Black Body Equations [6] [7] we can evaluate the temperature, distance and pressure from one baryon to another. Each bit of information is a checksum so if one type of data in the photon is split [4] the photon can still provide data to the receiving electron.

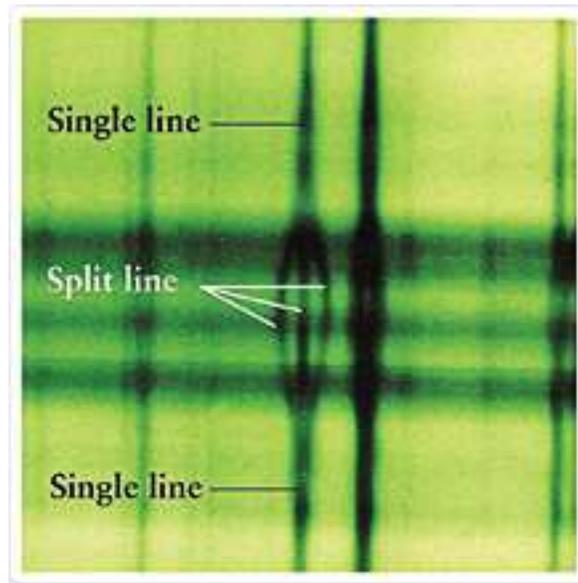


Image credit: NOAO.  
From Heidi Korhonen [5]

Photons are affected by magnetism. Here we see single photons being spread apart by a strong solar magnetic field. This is an impressive picture. We actually see the 3 data streams oscillating around each other. Photons are bent by strong magnetic fields. This explains lensing. We see lensing when photons are bent around massively dense magnetic objects in space.



Gravitational Lens Galaxy Cluster 0024+1654W. N. Colley (Princeton University), E. Turner (Princeton University) J.A. Tyson (AT&T Bell Labs) and NASA

Planck's Spectral Density Equations:

Frequency:  $u(\nu, T) = (8\pi h \nu^3 / C^3) (1 / e^{(h\nu/kT)} - 1)$

Wave Length:  $u(\lambda, T) = ((8\pi hc) / \lambda^5) * (1 / e^{(hc/\lambda kT)} - 1)$

These two each measure the same emission density of a photon using different bits of data.

In conclusion:

This is a model of baryonic structure without the need for gravity [8]. This model describes information transmission from one baryon to another through their boson interaction.

In future papers I will fully describe the interaction between baryonic matter and dark matter. I will describe the dark matter structure. I will write about the variables involved in baryonic motion. I will also write about the structure of dark energy.

Citations

[1] <http://en.wikipedia.org/wiki/Baryon>

[2] <http://www2.slac.stanford.edu/vvc/theory/quarks.html>

[3] [http://www.fnal.gov/pub/presspass/press\\_releases/sigma-b-baryon.html](http://www.fnal.gov/pub/presspass/press_releases/sigma-b-baryon.html)

[4] <http://www.unquantum.net>

[5] <http://www.cosmicdiary.org>

[6] <http://www.mpe.mpg.de/main.html>

[7] [http://en.wikipedia.org/wiki/Planck's\\_law](http://en.wikipedia.org/wiki/Planck's_law)

[8] <http://aaronreality.blogspot.com>