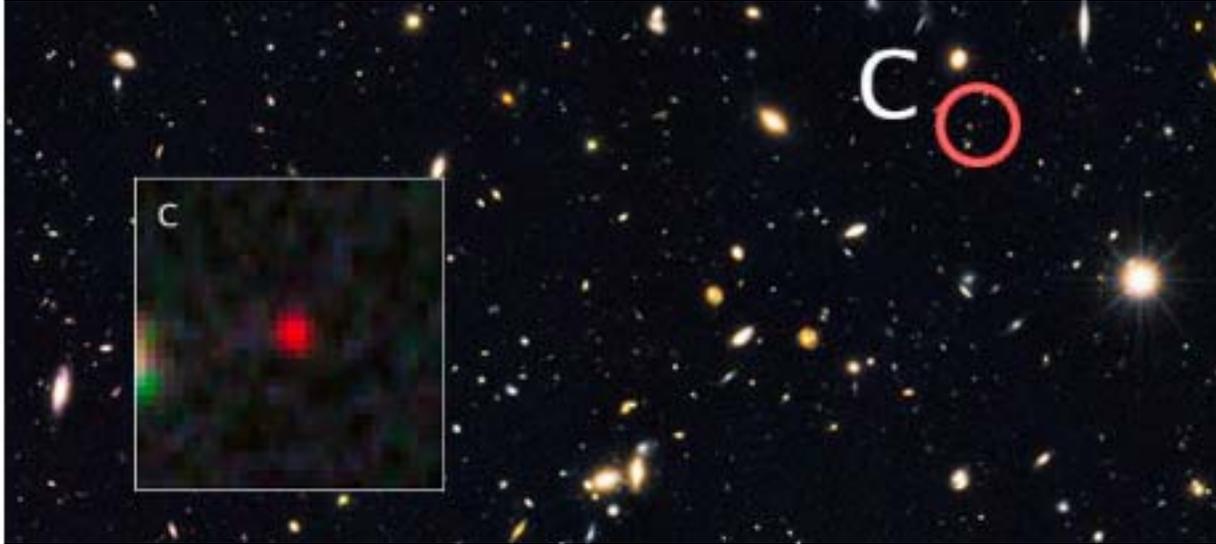


Hubble's "Edge of Universe" Photo Exposes 1960's Big-Bang Deception and Confirms New Quantum-Dimensional Cosmology

Hubble telescope identifies galaxy at the edge of the visible universe which has two dimensional detail and a visible redshifting of its light.

SOURCE: "Hubble Sees Infant Galaxies at the Edge of the Universe" By Phil Plait



http://www.slate.com/blogs/bad_astronomy/2014/01/09/distant_galaxies_hubble_image_of_galaxies_at_the_universe_s_edge.html;
DIGITALLY ENLARGED HUBBLE PHOTO as presented by Plait.

The digital image of the proposed "edge of the universe galaxy" presented by Phil Plait shows the galaxy as having two dimensional characteristics and as being completely red in color.

Although the amount of redshift (i.e. the light's "Z" factor) is not given, the light is completely shifted into the red which is consistent with the quantum dimensional maximum red shifting of "Z=1.5708":
[maximum quantum-dimensional redshift= $(\pi/2)(\text{wavelength})=1.5708(\text{wavelength})$]

Maximum shifting shows that the highest visible "6s" subshell (wavelength=389 nm) shifts to the red/yellow boundary (610.85 nm) and the blue "6g" subshell (wavelength= 486.1 nm) shift to red (763.56 nm) and the red orange "6h" subshell (656.23 nm) shifts out of the visible spectrum into the infrared (1030.8 nm). A "Z" factor of "1.57" would shift 17% of the visible spectrum into the red and the rest into the infrared producing an overall red color which is consistent with what is seen in the Hubble photo.



http://missionscience.nasa.gov/ems/09_visiblelight.html

Why Reported Contemporary Stellar Redshift Data is Deceptive

Actually, the measurement of stellar redshift is somewhat simple and straight forward. Most starlight is hydrogen based and the hydrogen absorption lines are a clear indicator of redshift. The wavelengths associated with the visible-light Balmer subshells (the quantum dimensional model)— the "6h" (656 nm) , "6g" (486 nm), "6f" (434 nm) and "6d" (410 nm)— are missing in starlight spectrographs because they

have been absorbed. The amount these absorbed wavelengths are shifted upward in wavelength is a measure of redshifting. Despite the utility of the absorption lines from the visible spectrum they have been recently deserted in contemporary astronomy.

“In spite of the obvious sensitivity of the Balmer lines to the physical and chemical conditions in the atmospheres of stars, they are underutilized in modern spectrographic analyses. We have been attempting to understand why this is so, and to see what can be done to improve the situation.”¹

The use of highly accurate hydrogen absorption lines have been deserted in recent years. For this reason, the amount of redshifting in the Hubble telescope’s “edge galaxy” can no longer be credibly analyzed by the largest survey of galactic redshift ever accomplished, that of the Sloan Digital Sky Survey (SDSS).

Redshift should either be accurately measured by shifts in absorption lines or be found to be indeterminate. Instead SDSS has made the amount of redshift “problematic” which needs to be judged by a computer program. This “computer adjustment” of redshift measurements was identified on the SDSS web site:

*“[SDSS measuring] methods are empirical in the sense that they use a *training set* as a reference, then apply machine learning techniques to *estimate redshifts*. The *training sets* contain *photometric and spectroscopic observations for galaxies*. We have chosen to use *machine learning techniques* with training sets, as opposed to template fitting methods, because of the *machine learning techniques*’ [have] *higher overall precision*.”²* (Italics ours)

That is, the SDSS computer programs are designed to manufacture independent criteria to “judge” the amount of redshifting, rather than being given predetermined “*spectroscopic training sets*” (such as the factual measuring of hydrogen absorption line shifting) which establish a “*template fitting*” for the machine to use.

How can computers self-teach redshift criteria from “*photometric and spectroscopic data*” outside that provided by “*template-fitting spectrographic data*”; to judge outside known characteristics such as shifts in hydrogen absorption lines? In what sense does “*machine learning*” provide “*higher overall precision*?”

The answer is instructive. The machine “learns” to fit ambiguous redshift data to the radical and illegitimate revision of “*Big-Bang*” cosmology which occurred during the 1960’s.

In 1929, Edwin Hubble had demonstrated that a statistical correlation existed between Cepheid distance measurements to stellar formations and the amount of redshift in the light from those stellar sources. He explained this correlation as Doppler effect from an expanding universe. The “Big Bang” universe was said to be expanding like the surface of a balloon, the points upon which separate or recede from one another at a rate which increases with the distance between any two points. From his data set, Hubble estimated this rate of recession as approximately 485 kilometers per second for each Megaparsec of distance³.

However, Hubble’s expanding universe would also measure the age of the universe and Hubble’s recession constant gave too low of an age estimate. After his death, astronomers radically altered the constant to account for an approximate 14 billion year old universe. They reduced his “485 km/sec/Mpc” to approximately “70 km/sec” for each Megaparsec of distance⁴. This was done without reference to any data (an exo-data revision) and in direct contradiction to Hubble’s own data.

¹ University of Michigan astronomy web site. <http://dept.astro.lsa.umich.edu/~cowley/balmers.html>

² <http://www.sdss3.org/dr8/algorithms/photo-z.php>

³ Dawson, L. “*The Quantum Curvature of Space vs. An Expanding Universe; comparisons by Hubble’s original redshift data*” p.p. 97-101. <http://www.paradigmphysics.com/Curvature-Redshift.pdf>

⁴ Ibid.

The 1960's revision of the expansion constant was strictly a mathematical adjustment such that the recession velocity would not exceed the speed of light at a presumed approximate 14 billion light year maximum separation between two points along the universe's "surface of the balloon." The "14e 9 ly" extent of the universe provided a speed-of-light limit on the expansion constant of "69.84 km/sec/Mpc." Choosing expansion constants which revolved around this value satisfied revisionist, non-empirical astronomy until the arrival of the SDSS which attempted to measure the extent of the universe using the revisionist cosmology with empirical redshift data.

In 2008, after surveying approximately 50,000 galaxies, the survey had found a maximum galactic redshift of "Z=1.4⁵." By applying raw redshift data, SDSS had only identified a distance of 28.6% (4.0009e 9 ly) of the universe's presumed extent, using the '60's exo-data revision's criteria ⁶. The survey could not really fulfill its mission of measuring the universe under the assumption of the revised "Big Bang" cosmology and by using actual optical data.

Since 2008, SDSS has replaced the actual optical redshift view of the far universe with a computer generated redshift view. The problem is the following: the 2008 "Z=1.4" maximum optical redshift could identify the edge of a 14e 9 ly universe extent if the expansion constant were 20 km/sec for every megaparsec (an actual suggested value on the SDSS web site). However, the universe could not reach an extent of 14e 9 ly under such a recession velocity. SDSS's solution was to computer-modify redshift views adjusted to the revised "Big Bang" expansion constant.

SDSS'S "BOSS" COMPUTER-GENERATED REDSHIFT-VIEW (USING THE '60'S EXO-DATA REVISION) IS NOT OPTICALLY VISIBLE

"Baryon Oscillation Spectroscopic Survey measures the universe to one-percent accuracy⁷"



This is an artist's concept of the new measurement of the size of the Universe. The gray spheres show the pattern of the "baryon acoustic oscillations" from the early Universe.

SOURCE: Lawrence Berkeley National Laboratory

⁵Forward to *The Quantum Dimension*; L. Dawson; Paradigm Publishing, ISBN 0-941995-24-0, 2009

⁶ I had reviewed and reported on SDSS 2008 data in my book *"The Quantum Dimension."* Currently, however, the Sloan Survey has ceased releasing raw redshift data, as they did in 2008, in favor of computer "judged" data.

⁷ <http://phys.org/news/2014-01-baryon-oscillation-spectroscopic-survey-universe.html>

Since 2008, the survey has chosen ambiguous redshift values by a computer program which selects among possible measurements those which are compatible with the 19'60's revised Big Bang theory. Doppler-effect redshift proposed by the revised "Big Bang" cosmology would be too great to make "edge galaxies" visible. Therefore, the computer-modified redshift measurements have been focused on closer objects.

The SDSS researchers chose a view of the sky at 2 billion light years distance (by revised Big Bang cosmology). This view allegedly provides data from 12 billion years after singularity rather than the 14 billion years after singularity on the edge of the universe. Theory was concocted which provided that the expansion had undergone variations throughout its history. The 2e9 ly view revealed an expansion variation which had allegedly produced neutrons and protons that were moving near the speed of light and causing light interference. This interference took the form of ring-like undulations in light patterns'.

Computers were programed to scan ambiguous redshift data from the targeted distance and to select values consistent with the preprogrammed theory. These selective scans were then used to produce the undulation rings predicted. The radii between the light sources and the edges of the rings, radii which were set by computer data-selection bias, were measured to determine age of the universe. Data which had been biased by theory was then used to prove the theory.

Any high school science student can identify what is wrong with this method. We must assume the staff of the SDSS and the Lawrence Berkeley National Labs have more competence than high school science students. Therefore, we can only conclude this "measurement of the revised Big Bang universe" represents a deliberate deception designed to further support the illegitimate 1960's Big Bang revision.⁸

The Hubble Telescope's Photo of an "Edge Galaxy" Reintroduces Optical Standards to Our Redshift and Distance Analysis

The Hubble telescope's maximum resolution is five hundredths of an arc second or $1.31579e-5^\circ$ ⁹. This resolution simply could not resolve a galaxy of permissible size and redshift characteristics, if the universe were composed by SDSS's revised Big Bang cosmology.

FOR COMPARISON OF SIZE: *Our own Milky Way galaxy is the only galaxy for which we have somewhat reliable estimations of its distance across. We can use this as a standard for comparative purposes. The Milky Way galaxy is 97,800 light years across (approximately 30,000 parsecs):*
 $\{ \text{Radius of Milky Way} \} \cong 0.0489e6 \text{ ly}$

Maximum Distance to the Edge of Universe (Quantum vs. SDSS Big Bang)

MAXIMUM QUANTUM ARC DISTANCE AT WHICH LIGHT CAN STILL REACH THE EARTH :¹⁰
 $\{ \text{light distance to the edge of visible universe} \} = (\pi/2)(48.42 \text{ Mpc}) = 247.948943547513e6 \text{ ly}$ ¹¹

SDSS'S PRESUMED MAXIMUM DISTANCE BETWEEN ANY TWO POINTS IN AN EXPANDING UNIVERSE: $\{ \text{max. expansion} \} = 14e9 \text{ light years}; \quad H_0 = \{ \text{expansion constant} \}$

$$\langle \text{Calculating "H}_0\text{" for "Max. = 14e9 ly"} \rangle: \quad c - \frac{14e9}{3.2616e6} H_0 = 0; \quad \text{Mpc} = 3.2616e6 \text{ ly}$$

⁸ This is only one example of the many uses of "computer modeling" to force real-world data to fit the pseudo theories advanced by consensus science.

⁹ http://hubblesite.org/hubble_discoveries/hstexhibit/telescope/about.shtml

¹⁰ Found by applying the quantum law of elliptical curvature to Hubble's 1929 data table. Space is curved at increasing distance due to increasing tension from the cosmological constant. The Hubble data shows that maximum linear distance for which light curved into an arc can reach the earth is 48.42 million parsecs. See "The Quantum Curvature ..." Op .cit.

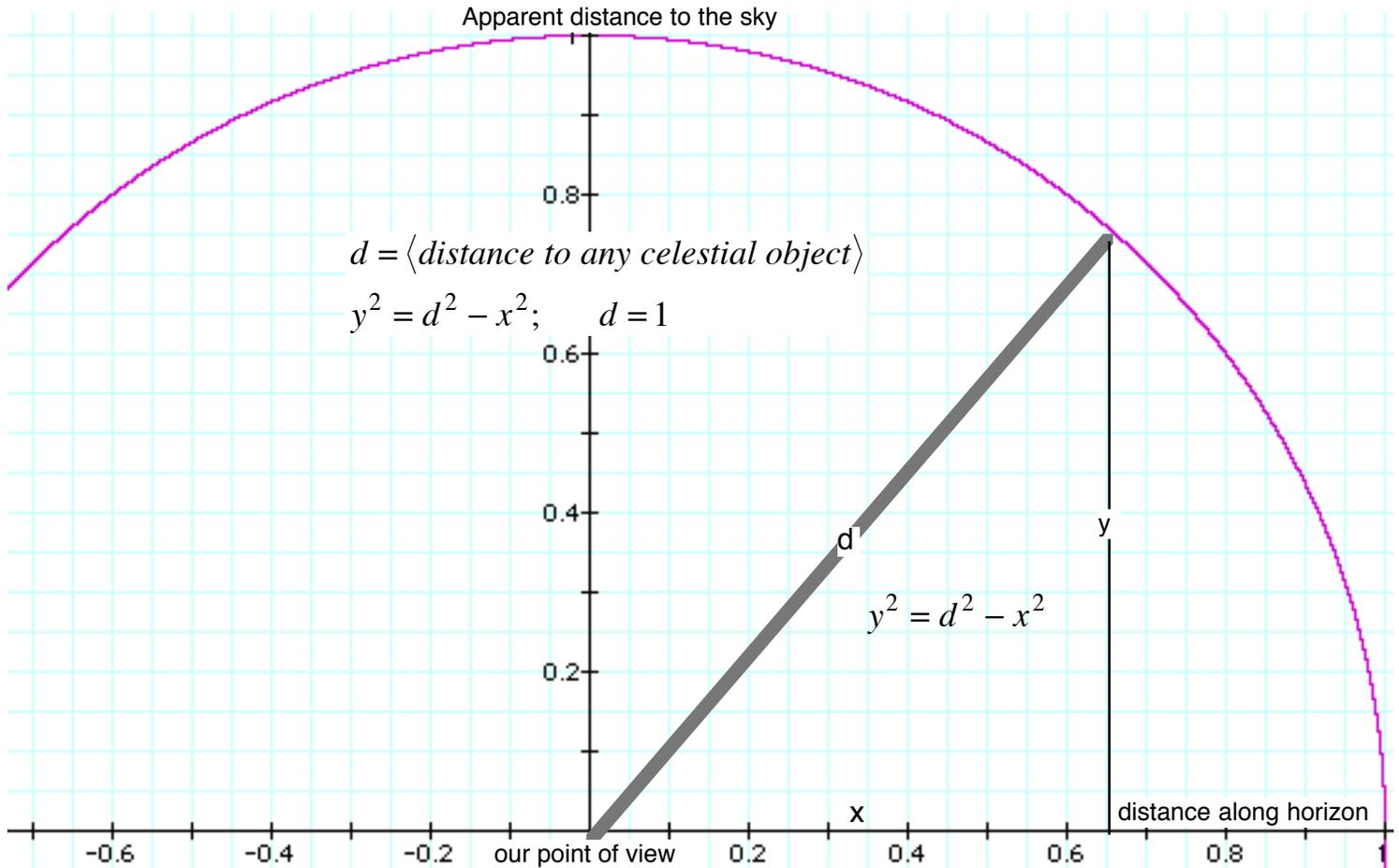
¹¹ "The Quantum Curvature of Space vs. An Expanding Universe; comparisons by Hubble's original redshift data." Op.cit

$$H_0 = \frac{c (3.2616e6 \text{ ly})}{14e9 \text{ ly}} = 69843.1 \frac{\text{m/sec}}{\text{Mpc}}; \quad H_0 = 69.84 \frac{\text{km/sec}}{\text{Mpc}}$$

The Potential Optical View of a Galaxy

We know from conventional geometry what the distance of a galaxy must be in order for it to fill the horizon-to-horizon view of our celestial globe. It must be set at the distance of its maximum radius in order for it to fill 180° of our celestial view.

Our View of the Celestial Globe



BY THE INVERSE SQUARE LAW: The apparent distance to the sky (y^2) from our point-of-view ($x,y=0$) ; this apparent distance changes by the square of the distance along the horizon (x^2). Apparent distance to the sky reaches “0” at “ $x=d$.”

For a galaxy set at a distance equal to its maximum radius and with its center at the zenith of our view, the apparent distance to the sky (y^2) along the horizontal axis will reach “0” at the edge of the galaxy. That is, the whole of the galaxy’s width will consume the full 180° of our celestial globe when the galaxy is set at a distance equal to its greatest radius.

By the same Inverse Square Law, as the galaxy recedes from us, the angle of our view of the galaxy will resolve as the inverse of the square of the increase in original radial distance. That is, If the distance

becomes twice that of the full 180° view of the galaxy, the angle of view will become one-fourth of 180°. The major axis of the galaxy will now only consume 45° of our celestial globe. The mathematical formula for this is the following:

$$r = \{\text{maximum radius of galaxy}\}; \quad d = \{\text{distance to galaxy}\}$$

$$\frac{d}{r} = \{\text{increase in distance as a multiple of maximum radius}\}$$

$$\{\text{angle of view}\} = \frac{1}{(d/r)^2} (180^\circ) = \frac{r^2}{d^2} (180^\circ)$$

Calculating the Radius of an “Edge-Galaxy” as visible to Hubble’s Maximum Resolution

$d_Q = \{\text{quantum curvature maximum distance}\} = 247.949e6 \text{ light years}$

$d_{Ex} = \{\text{expanding universe maximum distance}\} = 14e10 \text{ light years}; \{H_0 = 69.84\}$

(Max. Res. Hubble Telescope) = $1.31579e-5^\circ$

$\{\text{Radius of Milky Way}\} \cong 0.0489e6 \text{ ly};$

For a Quantum Space curved by a Cosmological Constant¹²

$$\langle \text{For Quantum Curvature} \rangle \quad \frac{r^2}{d_Q^2} (180^\circ) = \frac{r^2}{(247.949e6)^2} (180^\circ) = 1.31579e-5^\circ$$

$$r^2 = \frac{1.31579e-5^\circ}{180^\circ} d_Q^2; \quad r = \sqrt{7.30994e-8} (d_Q) = 0.0670e6 \text{ ly}$$

$$\{\text{Edge - Galaxy radius as a ratio of the Milky Way}^\circ \text{ radius}\} = \frac{0.0670e6}{0.0489e6} = 1.37$$

$$\langle \text{Amount of redshift} \rangle \quad Z = \frac{\pi}{2} = 1.5708$$

Quantum Distance for an “Edge-Galaxy” Radius equal to the Milky-Way Radius

$$\frac{r^2}{d_Q^2} (180^\circ) = \frac{(0.0489e6 \text{ ly})^2}{d_Q^2} (180^\circ) = 1.31579e-5^\circ; \quad d_Q^2 = \frac{(0.0489e6 \text{ ly})^2 (180)}{1.31579e-5^\circ}$$

$$d_Q = 180.864e6 \text{ ly}; \quad d_{Q-\max} = \{\text{maximum curvature}\} = 247.949e6 \text{ ly}; \quad d_Q/d_{Q-\max} = 0.72944$$

Calculating the Redshift “Z” Value for Quantum Curvature at 72.944% of Maximum Curvature¹³

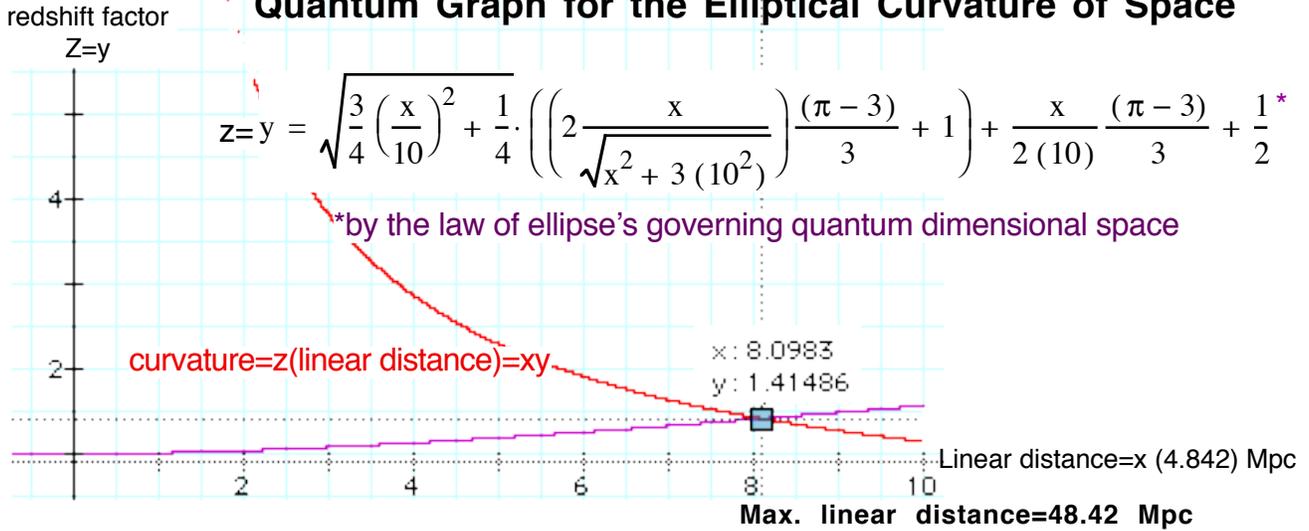
$$d_Q = 180.864e6; \quad (d_Q)/(d_{Q-\max}) = 0.72944$$

¹² See “The Quantum Curvature of Space vs. An Expanding Universe; comparisons by Hubble’s original redshift data” @ <http://www.paradigmphysics.com/Curvature-Redshift.pdf>. As well as “... the Derivation of Newton’s Gravitational Constant from the Quantum-Dimensional Definition of Mass” http://www.paradigmphysics.com/Quant_Gravity_Model.pdf

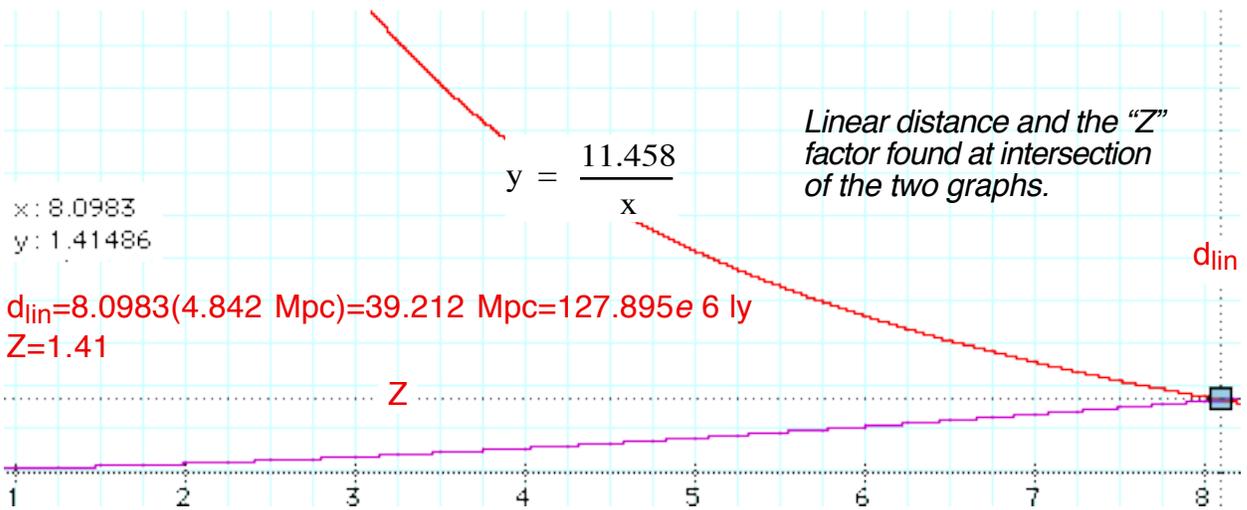
¹³ See “The Quantum Curvature of Space vs. An Expanding Universe;.....” p.p. 107-109. Op. cit.

$d_{lin}(Z) = d_Q;$ $d_{lin} = \{linear\ distance\}$
 $d_Q = \{curved\ distance\} = 180.864e6\ ly;$ $Z = 1.41;$ $d_{lin} = 127.895e6\ ly$ (See below graph)

Calculating “Z” and Linear Distance from the Quantum Graph for the Elliptical Curvature of Space



Calculating for a Curvature equal to 0.72944 of Maximum Curvature



For SDSS’s Revised “Big Bang” Cosmology

(Doppler Effect Redshift) $Z = \frac{c}{c - H_0(d)}$; $H_0 = \{Expansion\ constant\} = 69.84 \frac{km/sec}{Mpc}$ ¹⁴
 (For SDSS Cosmology) $\frac{r^2}{d_{Ex}^2}(180^\circ) = \frac{r^2}{(1.4e10)^2}(180^\circ) = 1.31579e-5^\circ$

¹⁴ The Quantum Curvature of Space vs. An Expanding Universe;.....” Op. cit.
7

$$r^2 = \frac{1.31579e-5^\circ}{180^\circ} d_{Ex}^2; \quad r = \sqrt{7.30994e-8}(d_{Ex}) = 3.785166e6 \text{ ly}$$

$$\{Edge - Galaxy \text{ radius as a ratio per Milky Way Radius}\} = \frac{3.785166e6}{0.0489e6} = 77.41$$

$\langle \text{Amount of redshift} \rangle \quad Z \rightarrow \infty \quad \langle \text{cannot be visible} \rangle$

Calculating the Hubble-Resolution Galaxy Radius and % of Maximum Extension for other Redshift "Z" Values

$$H_0^{meters} = 69,840 \frac{m/sec}{Mpc}; \quad Z = \frac{c}{c - d(H_0^{meters})}; \quad Mpc = 3.26163344e6 \text{ ly}$$

$$Z(c) - d((H_0^{meters}))Z = c; \quad d = \left(\frac{(Z-1)c}{Z((H_0^{meters}))} Mpc \right) (3.26163344e6 \text{ ly})$$

$$\text{Let "Z"} = 1.57; \quad d = 5.0831e9 \text{ ly}; \quad \frac{d}{14e9 \text{ ly}} = 0.3631$$

$$\{radius \text{ at max. Hubble resolution}\} = r_{HubMax} = \sqrt{7.30994e-8}(d) = 1.374313e6 \text{ ly}$$

$$\frac{r_{HubMax}}{r_{MkWy}} = 28.10 \quad \langle \text{For "Z"} = 1.40 \text{ values see table below} \rangle$$

Comparing the '60's Exo-Data Revision with Data-Based Quantum Dimensional Curvature for the Hubble Telescopes "Edge Galaxy" at Maximum Resolution

	Exo-Data, '60's "Big Bang" Revision H ₀ =69.84 (calculated by '60's standards)				Quantum Curvature Calculated from Hubble's 1929 Data Table			
Z Factor	distance in light years	% of edge distance	actual λ shift	galaxy radius per Milky Way: r=x(Mk Wy rad)	distance in light years	% of edge distance	actual λ shift	galaxy radius per Milky Way: r=x(Mk Wy rad)
Max	14e 9 ly	100%	infinite	x=77.41	247.949e6	100%	1.57 λ	x=1.37
1.57	5.0831e 9	36.31%	1.57 λ	x=28.10	247.949e6	100%	1.57 λ	x=1.37
1.40	4.0002e 9	28.57%	1.40 λ	x=22.12	180.846e 6	72.9%	1.41 λ	x=1
1.018	247.949e 6	1.77%	1.02 λ	x=1.37	20.0964e6	8.11%	1.02 λ	x=0.1111*

*Quantum values for "z=y=1.018; x=1.25; curvature =xy=6.161445 Mpc

The '60's Exo-Data "Expanding Universe" Revision— SDSS's Deceptive Computer-Biasing of Optical Data notwithstanding— is Disallowed by the Hubble "Edge Galaxy" Photo
Hubble's Telescope could not see an "edge galaxy" at the maximum extension between any two points in a universe which was defined by the '60's expanding universe revision. The light would not be visible because redshifting would have approached infinity and produced wavelengths which were well outside the range of the Hubble telescope. A dark galaxy at the universe's edge is established by the

mathematical formula which produced the '60's revision. Even if such a galaxy were visible, it still would require a questionable radius of 77 times the radius of the Milky Way in order to appear with any length and width at Hubble's maximum resolution.

In contrast, the "edge of the visible universe" for the quantum curvature model is the greatest distance for which light can actually reach us. For light sources of greater distance, maximum quantum curvature will cause the light to fall ahead of us along the line of opposition to the distant light source. We will not be able to see it. The quantum curvature is graphed as redshift, "y," to linear distance "x." The graph is built upon Hubble's 1929 data table which showed light redshifting for Cepheids of measurable distances.¹⁵ Hubble's data table was fit to a graphing curve using the discovery of quantum-dimensional mathematics that an exact formula for the periphery of an ellipse existed if the center point of a circle were split to create two focal points with a quantum distance of separation between them¹⁶. As the the linear distance (major axis of the ellipse) between our view and a light source becomes smaller, the linear distance becomes more "quantum like" with a greater distance of separation between the focal points and a greater eccentricity (smaller variance between elliptical curvature and linear distance). The curvature graph reflects the law of ellipse's for quantum-dimensional space as revealed by the quantum mathematical derivation of an exact formula for the periphery of an ellipse.

However, the quantum-dimensional model of distance related redshifting— as variations in the elliptical curvature of space— cannot be established by either mathematics nor theoretical logic. It must be established by hard empirical evidence and the Hubble telescope's photograph of an "edge galaxy" can provide a key test. The order of magnitude between quantum curvature and the expanding universe has always been immense. Hubble's original expansion constant of around 500 km/sec for every Mpc of distance produced a distance to the edge of approximately 2 billion light years. This seemed too short a time for the age of the universe. This alleged "missing time" initiated the '60's exo-data revision to 14 billion light years. The quantum-dimensional model, based upon Hubble's data table, predicted a curved distance to the "edge" of 248 million light years. This is a small proportion of both Hubble's original expansion constant and of the '60's exo-data revision (12.4% of Hubble and 1.77% of the exo-data revision). The maximum resolution producing the Hubble telescope's photo of an "edge galaxy" is an excellent chance to test the variances in the order of magnitudes which are predicted by the two models.

Hubble's Resolution of an "Edge Galaxy" confirms the Quantum Curvature Order of Magnitude and disallows the Order of Magnitude proposed by the Exo-Data Revision of an Expanding Universe

The capacity of the Hubble telescope to resolve an "edge galaxy" confirms a visible universe of the order of magnitude proposed by quantum-dimensional mathematics. The telescope has the capacity to resolve a well-defined galaxy of maximum visible redshifting. A galaxy at the visible edge of the quantum-dimensional universe with a radius of 1.37 times that of our Milky Way would be resolved in geometric detail by the Hubble telescope's maximum resolution. Further, the redshifting would be the maximum found in the star field and would shift 17% of the visible spectrum into the red and the rest into the infrared for an overall red which is consistent with what is seen in the Hubble photo. Possible galaxy sizes which ranged between "1.37" times the Milky Way and "1" times the Milky Way incorporate the last 27% of curvature distances, with variations in redshifting between "Z=1.57" and "Z=1.41." At the lower end (galaxy radius equal to the Milky Way's), 27% of the star field would be "redder" than the photo galaxy. At "Z=1.4," 25% of the higher visible frequencies would be shifted between blue and yellow orange while 17% would be shifted into the red and the remainder would be shifted into the invisible infrared frequencies. Unlike the "Z=1.57," the predominant color would not be "red" as found in the "edge"

¹⁵ The data table which initiated Hubble's "expanding universe model."

¹⁶ "Quantum Determination of Elliptical Periphery and the Detection of Systemic Error in the Maclaurin Derivative Series" L. Dawson, Master's Thesis; <http://www.paradigmphysics.com/masters-thesis.pdf>

photos. Since 27% of the star field are not “redder” than the “edge” galaxies” the lower 1.4 Z factor must be rejected.

The situation is even more serious for the exo-data revision of an expanding-universe cosmology . The “Z=1.57” — which would allow for the “red” color in the photograph to occur — would position the “edge galaxies” at 36.31% of the 14 billion light year maximum distance between any two points within the expanding universe. 63.7% of total stars should be further away and have a larger “Z” value and be redder in color. Even assuming that other galaxies in the star field do not have radii of 28 + *times* that of the Milky Way which would allow them to be resolved in geometric detail, their light should still be more redshifted than that of the resolved “edge” galaxy. We do not find this in the photo. In fact, the “edge” galaxies were identified as reddish colored light points unique to the star field of which they are part. The edge galaxies chosen by outstanding red color within the star field, were then resolved to geometric detail by the maximum resolution available to the Hubble telescope. This could not occur if the universe were of the extent and redshift distribution proposed by the 1960’s revised “big bang” cosmology as apologized for by SDSS’s computer biasing of optical data.

The revised exo-data expanding universe and its data-biased support by SDSS must be rejected as a possible cosmology for the universe and all past astronomical distance which have used redshift values as standardized by that cosmology are wrong.