



The “Blackbird”, SR-71, could fly at Mach 3, with a 2 man crew
On view in the Forecourt of the San Diego Air & Space Museum

5TH **DIMENSION**

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The Topic “The Fifth Dimension” seems to be generating more heat than usual in these days of Rapid Change. As individuals, as organizations and as nations, it changes all the rules of social intercourse, as well as governing bodies. To make that jump into instant speed; to not be left behind as a Luddite, we need to dive into the water and learn how to swim in what is now the Main Stream. We are heading for the new “Normal” which will become our everyday world as we proceed into the 21st Century.

We in NIUSR are wrestling with this 5th Dimension. Its exponential speed has succeeded in changing our perception of our world and our new Century. In comparison to the speed of change experienced in the World after the introduction of Henry Ford’s Tin Lizzie, that previous change will

seem to have been a mere blip in the road. There is no comparison to the exponential increase in rates at the Speed of Light.

Carry that increase in speed from the space shuttle's travel to people. Today, each time a person uses a cell phone or such device, **they** travel with the aid of television and voice anywhere in the world instantaneously. They arrive at your door or meeting room in seconds. They are presenting as a pictograph but with all the characteristics of that particular moving, talking "live" creature.

Folks seem to be quite fire-y about pros and cons and once again we find ourselves lacking the "right words" to explain the intricacies of the concept. Or, even with the "right words", having differing interpretations of those words. At this transaction speeds, business decisions must be bade click, click, click. There is no time for discussion or contemplation.

For me, the definitive discussion is an article by Dr. Robert Bunker. I recommend it to you. It is testimony before The U.S–China Economic and Security Review Committee, 2007.¹

What then are my credentials to undertake a discussion on such a controversial and volatile subject? I've been reading and studying up on all I can find on the 5th dimension, cyberspace and related topics. Let me set the stage with a quick re-cap of some of my background so you can evaluate the worth of my words. I have been (among other things) a cook at Camp Pendleton for the Marines during the opening days of the Viet Nam war. I hold a Bachelor Degree in Science from Skidmore College in upstate New York.

Are you impressed with my credentials yet? Don't be. My degree in Science was awarded in Home Economics, i.e. Cooking and Sewing. Those were real "majors" for women in College in 1938 but I did graduate "cum laude".

Will a credential earned long after college add to my luster and your reassurance? I hold a NASA license for a satellite experimental ground station at L-band.

I have been studying up on Cyberspace and the 5th Dimension. So how do I presume to write my views on such an essential concept for life in this Century? Because, in my attempts to get my arms around this newly

emphasized topic, I couldn't find the one book I needed. An understandable explanation in everyday language to learn all I should know about the 5th dimension

I could not find any book entitled "The 5th Dimension for Dummies." Aha. Here was my chance to write one!!! Since this knowledge is so important to our successful journey into the 21st century, permit me and my smarter friends to take a stab at explaining our versions of the 5th dimension.

"The 5th Dimension for Dummies".

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Point One. The 5th Dimension is not a "Thing". It is a "Concept". You cannot see it under a microscope or in a telescope and there are two schools of thought on whether or not you can diagram it. It is not a version of an Internet Network Cloud. That can be diagramed if you want to spend the time. However the 5th dimension exists and is "real" in the sense of the word "concept."

To get down to basics, may I say it is as "real" as the concept of Love? Both Love and the lack of Love are real, although with wide individual interpretations. You cannot see Love under a microscope or with a telescope.

But let us leave the concept of Love to greater minds such as Shakespeare and press on to a concept where you may find yourself more comfortable: Physics 101 in High School.

High School Physics was our original testing ground for understanding the concept of three dimensions and the x, y, and z axes. In high school we struggled with equations which delineated relationships of length, width and the vertical scale of height (which included depth on the "z" axis.)

We added "Time" as the 4th dimension, at least in my Physics 101 class.

This is where it became complicated. Time is a “nonspace continuum” where events occur in an irreversible succession from the past through the present into the future. Time is a separate and distinct dimension but is a critical component of events.²

All would have been well if we had stuck to hours and minutes on the 24 hour clock. However when the measurement of Time was linked to Distance things became more complex. We again measured Distance in the dimension of “elapsed time of travel and speed.” Although we no longer tell time and distance in the Native American fashion of “Sleeps” and “Nights”, we do think of time and distance together, e.g., as days, weeks, months or years of travel, dependent upon our chosen method of transportation.

Time passes. Rules of measurement change. Let’s talk about a tape; a yardstick and the Slide Rule. Dressmakers measured ladies with a tape. Every house had a yardstick. Engineers had a Slide Rule. The yardstick worked pretty conveniently during the past century but it is about to go the way of the Slide Rule which was a handy little gadget that every engineer carried in his vest pocket 40 years ago. Now computers do those equations for us. But don’t overlook countries that use the metric system of meters and kilometers. I’m sure they don’t call it a “yardstick”?

For a moment let’s re-visit our three dimensions, x, y and z. With these equations we could understand the relationships of a rudimentary shelter: a floor, a roof, and four sides- length, width and height. The original shelter grew to be a three dimensional shack. Good. Got it. **It’s a BOX.**

But people weren’t satisfied with living in a box, so we are, we punch holes in it for windows and doors and over the ages we wind up with castles which are really only a pile of boxes.

If you’re going to have a castle, you have to have a dungeon. No Lord of the castle could be without a place to keep his enemies. So we have something UNDER our box. That elongates the vertical axis (our “z” in Physics 101) to include “depth” (although sailors and seafarers had long before added depth to their vertical dimension.)

Dungeons became “socially unacceptable”. We changed the name to “cellar”. We now had cellars to store jars of pickles and home brew and old tables and junk. When indoor heating moved from the fireplace to a massive

furnace with a ton of coal, it usurped the space in the cellar. Our cellars ran out of room under our house so we added an Attic, During these ages we continued living in our comfortable house (or boat) in our 4 dimensions and measuring everything as we always had, with a tape or a yardstick or a surveyor's transit and by a 24 hour clock.

While most of us were happily plodding along in the daily grind, our more ingenious *homo sapiens* friends were over in a corner with other ingenious folks who decided to go to the Moon. POW. That was an instantly popular thought that intrigued almost everyone. It appeared that each of us had a small child inside us that always hoped the moon was made of green cheese and that a Man in the Moon was a possibility? The 5th dimension doesn't seem to have the same appeal.

The 5th Dimension is measured in relation to we have added the concepts of "Time" and "Space". These involve basic changes in ways of measurement. The yardstick, while useful on the ground, is not functional in Space. We must measure in "light years". (A light year is the distance that light can travel in a vacuum in one Julian calendar year. Let's not get into "parsecs"). We need to keep this treatise simple as the "5th Dimension for Dummies".

What we call "SPACE" today should more properly be called "near-space." It is that area **above** your house and it goes a long way UP from your home. But it is NOT the Universe. It is only Earth's, our beautiful Blue Planet's universe, a truncation of time and space. That is plenty big enough to give us lots of new opportunities as well as problems in how to "measure" things and maneuver and communicate within it.

This area has many new names associated with it. Ionosphere, atmosphere, cyber space, as well as the 5th dimension. For our purposes we will define our 5th dimension measurements, equations and rules as being applicable to "near-space." Already it is a busy place. Today there is a lot of "junk" up there and more to come. Satellites and Space Stations and pieces of exploded rockets and missiles and nuts and bolts dropped off by space-walkers repairing Space Telescopes and other "stuff".

At the bottom of this "space" are aircraft on which we fly everyday. And above that, UAV's and Low Orbiting Satellites and above that are the Geostationary Satellites and more being planned to launch as we speak. And

above that is Mother Nature's contribution flying around: Asteroids, Comets, other Planets and their Moons and our Moon.

Today the 5th dimension has entered our reality with its need for new measurements for Space/time and distance. As we try to occupy this new "attic" above our home on earth. The old measurements are not applicable. We continue to use these old ones which work so well on earth in "humanspace". While 4D concepts still apply they are not useful in the 5th dimension. They are not functional in a Space where objects (including our space shuttles) travel in orbit around the earth at stunning speeds. We need a new concept for time and distance.

This brings us to our most immediate "Catch 22."

Those same ingenious "*homo sapiens*" from our moon-walk days have gotten into the communications end of the 5th Dimension. In this sense, the 5th dimension is not merely an area for space structures and space shuttles. It has sensors and Satellites. It is better described as an "information space". Whenever someone talks through a cell phone via cyberspace, they are in effect "moving through space". In communicating with our astronauts and to the scientific probes to Mars, Jupiter and the like, we have also developed the ability to talk around the world and discovered that these transmissions travel at nearly the speed of light. Today, communications in cyberspace interact daily with our "*humanspace*" below. These communications are nearly instantaneous. This is true regardless of the distance on earth from point to point. So the amount of "time" to calculate when our signal arrives to the desired location is not a factor – (We have designated that measurement as Zero since it is not a factor in our equations FOR SPACE.) In our calculations, the time needed for the transmission to reach its destination is essentially Zero.

What about Distance? Remember the signal is traveling at the speed of light. It IS light, and therefore it has to "see" where it is going. It cannot go through a mountain or underground, but providing that signal can "see" its destination, distance is almost instantaneous and again is not a factor. It is Zero. However we are still telling Time by Distance traveled IN SPACE as we do on Earth BUT the SCALE is totally new. It is in **light years** (ly) and trillions of "miles" in "OUTER SPACE to the stars in the Universe.

For our treatise for Dummies and the immediate future, let's focus on our closer planets. Take Planet Mars. Mars permits us to start our exploration of these interesting opportunities/problems closer to home. One advantage is we can hit Mars with sensors (robots) that can dig and move and send photographs and data back to earth. But it cannot (at present) carry enough weight for the signals to handle anything but the most rudimentary two-way communications.

Again, those smart friends over in the corner are busy figuring ways to increase the range of these robots to communicate more "intelligence" back to the scientists on Earth. One of their ideas is to plant a Space Network on orbiting asteroids to hop the earth signals to Mars via these orbiting repeaters. Why use an expensive Satellite when you have all these natural platforms? However this is not "Legos for Adults". This is NOT a simple solution.

In 1960 the CIA had our U-2 flying in near-space over Russia when Gary Powers was brought down. Then the Berlin Wall fell and we decided we didn't need "spy planes" anymore?

The Military replaced the U-2 capability with the "Blackbird" SR 71. What a plane that was. It flew at Mach 3 in near-space with a 2 man crew. Very few were produced. You can see one of those original planes in San Diego's Balboa Park in the forecourt of the Air and Space Museum.

Don't just look at it, as beautiful and sleek as it appears. Walk underneath it and see its size. It is as wide as a highway. From below it resembles a platter on which to serve a roasted dinosaur. It is immense! But it was a stealth aircraft and appears narrow and fast but not threatening. Oh yeah. It flew very few times as the Berlin Wall crumbled and reconnaissance changed from manned aircraft to Satellites. Check it out. It's a thrill to see.

Yes, we are struggling with the words for all these new opportunities and once we have the words, we must agree on their meaning. In the meantime, NIUSR and YOU, (like it or not) –are living in the [new](#) generation of Cyberspace. This "operational space/information space" is a [distinct dimension without the attributes and features of either space or time](#). It is a conceptual "**place**" outside the same gravity of our earth, with new rules, new measurements, and new ways of maneuvering. [You don't use physical objects to maneuver in it per se, but I guess you could say that](#)

you would use physical objects to capture, deny, delay, or manipulate information, etc. but I really think that analogy would confuse a person who has yet to be convinced that such a dimension exists. Likewise, the maneuver objective is not to gain and maintain control of key terrain because there is no “terrain”. The goal is to gain understanding.

Interestingly, Secretary of Defense Robert Gates established an Oversight Committee on Cyber Security last month and this week of June 20, 2009 established a new Military “Command for CyberSpace”.

Remember the 5th Dimension is a “Concept” which cannot be seen. But it is there. It is a conceptual “**place**” with new rules, new measurements, and new ways of information exchange. It is a “place” with challenges, which could bode both benefits and danger. It is here today, and it will be here in our foreseeable futures.

You and I live “Here”. We are “Here”. But look around you. Our “Here” has changed and continues to change ever more rapidly. Get into the new “Here”, the New Main Stream. NIUSR is providing the transportation to what is becoming the new “normal”. We’re providing a “NIUSR” 5th dimension imaginary “bus”. On its side it reads NIUSR and it’s painted International Orange for Lifesaving. The first trip is already en route but YOUR seat is reserved. (The “bus” is a hybrid using petroleum and electricity, heh, heh.) **The destination is still somewhat unclear in detail. That is your job. NIUSR provides the transportation for your ideas and your smart answers for the next vision of “normal” for 2010 and up.**

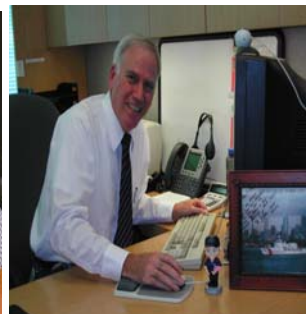
Get on the Ride. We promise it will be a great trip accompanied by the best people in the business, your NIUSR friends. Press On.



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1. Dr. Robert J. Bunker: CEO. Counter-OPFOR Corporation. "Testimony before the U.S.-China Economic and Security Review Commission" 2007
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