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**THE
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SPRING 2014



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Front Cover: Operation Dominic, Test: Truckee, June 1962, Christmas Island. Parachute, airdrop from B-52; Yield: 210 kilotons.

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EDITORIAL

The last half a dozen issues or so have been rather technical. Such is the byproduct of the new book. In this issue we'll have a lighter fare. I hope to create some astronomy projects for youngsters from about 5th grade on up. The goal is to construct and learn to use astronomical instruments such as an inclinometer, a sextant, and a spectroscope. The idea is to make these out of simple materials without having to spend much money for supplies. In this issue our first project is an astronomy project that enables people to tell the time of day on any clear night when Polaris, the Big Dipper, or Cassiopeia are visible. With a little practice you can tell the time accurate to about 15 minutes. All that's needed is a chart on pg. 49 that can be copied and laminated, and some instructions on how to use the chart.

The first article in this issue describes a day in 1950 when in the northeastern United States the afternoon sun suddenly went dark. Commonly it is known as "Black Sunday." Forest and peat bog fires in northwestern Canada generated the cloud that caused the darkness. At the time, some thought it was that the Russians had nuked the United States; a few thought it was the end of the world. Most assumed it was due to some "government project." Maybe it was a bit of all; except for the nuclear attack. The cloud caused colder weather for months afterward, for the 1950-1951 winter was unusually snowy and cold. The cloud crossed the Atlantic, circled the globe and came back to bless regions in the US with a snowfall near thanksgiving and a very cold spell lasting through December.

About the same time, the U.S. was working on its nuclear program. The American government and the media, which had been enslaved to the government since before the Civil War, decided that the American people should be made to have a psychotic fear of radiation—which is the least danger of an atom blast. We compare the Fukushima reactor leak with pre-1950s radiation safe dosage ranges and show how governments harness fear of radiation to steal land that is not really dangerous to inhabit at all except for the lies of the fear mongers.

We also have a short political piece that describes the difference between what progressives, (also known as socialists, Marxists, communists, Nazis, Bolsheviks, Maoists, liberals, humanists, atheists, robber barons, Democrats, neocons, and Republican politicians) call "greed" and what conservatives call "greed." They do not mean the same thing. Socialists mistake ambition for greed; thus ambitious people, who tend to work harder and so make more money than the aver-

age person, are called greedy by progressive socialists. Socialists think that their definition of greed allows them to steal money from the “greedy” ambitious and give it to those without ambition who are content to live off the work of the ambitious. Because they steal from the ambitious, defined by them as greedy, they promote the morality of Robin Hood; who stole from the Sheriff of Nottingham to feed the oppressed. But the motive of the progressives is not pure, for then would they give from their own purses or teach the poor a trade so they can feed themselves. No, the greediness of the progressive socialists is greediness for power. They steal money to buy power: power over rich and poor alike.

I have said it before and I will say it again: cosmology, as the study of the universe, must include matters far removed from astronomy. In past issues we have covered the significance of the Word to cosmology, physics, and linguistics. These are “old hat,” as the saying goes. In recent years more attention has gone into what has traditionally been called *metaphysics*, which is quite often associated with the occult but it has other associations, too.

Several cosmologists have looked at the relationships between God and his creation. In this issue’s “Panorama” we look at one cosmological-biophysical theory about the soul. At this time it is little more than a guess. It does little in explaining the spiritual realm.

Back in the late 1960s and early 1970s, when I first started to look into spiritual matters with mathematics and science, many of my friends felt uneasy, as if I was interfering in matters they were sure were off limits to the human mind. But I recalled the time I was in church circa age 5 and the preacher talked about God’s infinite properties. When I asked for an explanation, I was told in no uncertain terms that by asking such questions I was dishonoring God. I wondered—not out loud but to myself— how asking an innocent, child-like question about something I truly wanted to know could be dishonoring to God: after all, he doesn’t have to answer if he doesn’t want me to know.

For a while we were selling copies of Bastiat’s *The Law*. That was put on hold until a point similar to the above “dishonoring to God” limitation was settled. I discovered that contrary to my critic, God does give us some rights. Lamentations 3:35 speaks of turning aside “the right of a man.” The context is very similar to what the US will face in the not too distant future. *The Law* exposes the foundation of socialism. It should be a “must read” for any course in civics, law, and economics. The price is \$6 postpaid.

DARK SUNDAY

Gerardus D. Bouw, Ph.D.

More than a dozen times since its birth, the United States has experienced times so dark that daylight turned to night in a matter of minutes. Every one of these has been precipitated either by a volcanic blast, forest fire, or grass fire. The most extraordinary dark day happened on Sunday, 24 September 1950. Officially blamed on forest fires in Canada, many witnesses doubted that explanation.

I have no doubt that the forest fires played a major role in the dark days that followed. The dark cloud reportedly went as far east as Siberia; and therein lies another tale: the tale of the blue moon. But first, some background information.

The Plains Dust Storm of 1935

The 1950 Dark Sunday was not the first time the U.S. had a darkening in the 20th century. On 14 April 1935 a dust storm in the Plain states blocked out the sun. Above the dust cloud, observers noted the presence of rainbow colors. Birds flew ahead of the storm and people and animals caught in the storm could scarcely breathe; and some died. Some houses and barns were nearly buried by the settled dust. Thousands of acres of wheat and corn were destroyed. The colliding dust particles built up static electricity, powerful enough to knock people down.

When I interviewed my aunt, Janna, in the Netherlands in connection with the story of the Dark Sunday, she first thought I was asking about the 1935 incident; in 1935 she was twelve years old.

The Post-war Social Climate

World War II ended in 1945. The country was impoverished: firstly, by the post World War I international economic actions of the world's governments; secondly, by the Depression; thirdly by the theft of Americans' gold; fourthly, by the Stalinist executive orders dictated by Roosevelt during the 1930s; and fifthly, by the expense of World War II. Although most Americans believe that WWII took us out of the Great Depression, the truth is, that is a myth. It was God's grace and the post-war baby boom's need for housing that in 1947 brought America out of financial ruin.

Nineteen-forty seven was also the year that UFOs hit the news. The unidentified lights in the sky that behaved like no earthly flying machine fascinated people.

Then, too, 1947 ushered in the first successful attempts by governments to control the weather. Cloud seeding was not new, but now seeding could take place above the clouds and at altitudes previously unreachable. Over the Southwest U.S., clouds were seeded with salt, silver iodide (AgI), dry ice, and, for lower altitudes where higher temperatures prevailed, liquid propane. In the U.S., the cloud seeding program was called the “Artificial Cloud Nucleation Project.” The US Navy and the Air force both had seeding projects, as did the United Kingdom and China.

On 6 September 1950, a test pilot named Willington and his navigator were test flying an F-94 out of San Angelo, Texas when they were alerted by radar control operators that there was a UFO in their area. Willington reported:

Headquarters wouldn't let us go after it and we played around a little bit. We got to watching how it made 90 degree turns at this high speed and everything. We knew it wasn't a missile or any type. So then we confirmed it with the radar control station, and they kept following it, and they claimed that it crashed somewhere off between Texas and the Mexico border.¹

The U.S. Weather Bureau Report²

The weather in British Columbia and Alberta was unseasonably warm and dry during the first half of September, contributing materially to the onset, of extensive forest fires. According to conservative estimates furnished by the Canadian Embassy at Washington, D. C., approximately 60 fires burned in British Columbia, and forestry officials in Alberta counted 37. The fires, beginning about mid-September, extended west from Grande Prairie, Alberta, through Fort St. John, British Columbia, to the foothills of the Rockies and north to Fort Nelson, British Columbia, with others raging near Wanham, Alberta, 340 miles northwest of Edmonton, Alberta, and Newbrook, Alberta, 70 miles north of Edmonton. The dashed hatching in figure I indicates the principal fire area. Undoubtedly other scattered forest or tundra fires in western Canada contributed smoke to the atmosphere since the fall season is usually fraught with such fires. During the last week of September, light snow and rain helped extinguish most of the fires.

The smoke from the fires spread eastward passing over central Canada, then southward over the Great Lakes region and the eastern

¹ Source: Major General E. B. le Baily, USAF Director of Information, in a 28 September 1965 letter to the USAF Advisory Board.

² Smith, Jr., Clarence D. 1950. “Widespread Smoke Layer from Canadian Forest Fires During Late September 1950,” Monthly *Weather Review*, September. What follows are excerpts from the article.

United States as far south as Georgia and Tennessee. The denseness and unusual optical effects of the smoke first became very noticeable over the northeastern United States on September 24. The weather observer at Idlewild,³ N. Y., reported that the sun appeared pink; at Allentown, Pa., and Buffalo, N. Y., it looked purple; at Findlay, Ohio, and Parkersburg, W. Va., blue; and at Washington, D. C., lavender. The sky was usually described as yellowish or greyish-tan. Williamsport, Pa.; Dunkirk, N. Y.; Martinsburg, W. Va.; Sault Ste. Marie, Mich.; and Nakina, Ontario, were some of the stations reporting unusually dark conditions during the day with a few experiencing reduction of light to nighttime darkness. By noon September 26, the smoke had been carried across the Atlantic as indicated by the observation of a blue sun from the Isle of Man in the British Isles. Later other reports of unusual optical effects came from European stations.

Such widespread smoke from forest fires has been observed in past years. In 1918 forest fires in Minnesota produced smoke which was observed as far away as Texas and South Carolina. The record of dark days in the United States resulting from smoke pollution extends back to 1706 according to Plummer.⁴ The effects of smoke pollution have also been observed for centuries as dry fogs and colored rains.

Development of the Fires

On the first of June, a manmade fire started about 20 miles north-northwest of Fort St. John, British Columbia. Since larger fires were already burning in neighboring Alberta, demanding immediate attention, the British Columbia fire was allowed to continue to burn as it was in an area slated for deforestation for agricultural lands.

During the period September 5 to 23, that part of British Columbia and Alberta, as the fire area, experienced a drought principally due to a ridge of high pressure at the surface and aloft which occupied the region most of that period. The ridge acted as an efficient blocking obstacle to the passage of the customary train of maritime fronts. The fronts that moved up to the ridge weakened markedly or frontalized; consequently almost no precipitation occurred in the region. Some rain fell west of the Rockies, but the east side remained dry due to the combined effect of topography and the semi-permanent ridge which weakened the front as it approached. These conditions are representative of the drought period preceding the forest fires. As would be expected in a persistent ridge, the surface winds were generally light and variable.

³ Now called JFK International Airport.

⁴ F. G. Plummer, 1912. "Forest Fires," *U. S. Dept. of Agriculture Forest Service Bulletin* 117:15-22.

These factors contributed not only to the production of the forest fires, but also to the accumulation of a large amount of smoke in the fire area.

Thus far quotations from the Weather Bureau article: now my report based on other sources.

As reported in the article, a total of 97 fires burned uncontrolled in the hashed area in Figure 1. The first fires were deliberately set by persons unknown and were allowed to burn. There is a hint that the fires may have been set by the military. Later, some other fires were deliberately set to clear land for farming. Careless campers caused other fires. (Smokey the bear's slogan, "Only you can prevent forest fires" had started in the States two or three years earlier but had not yet reached Canada.)

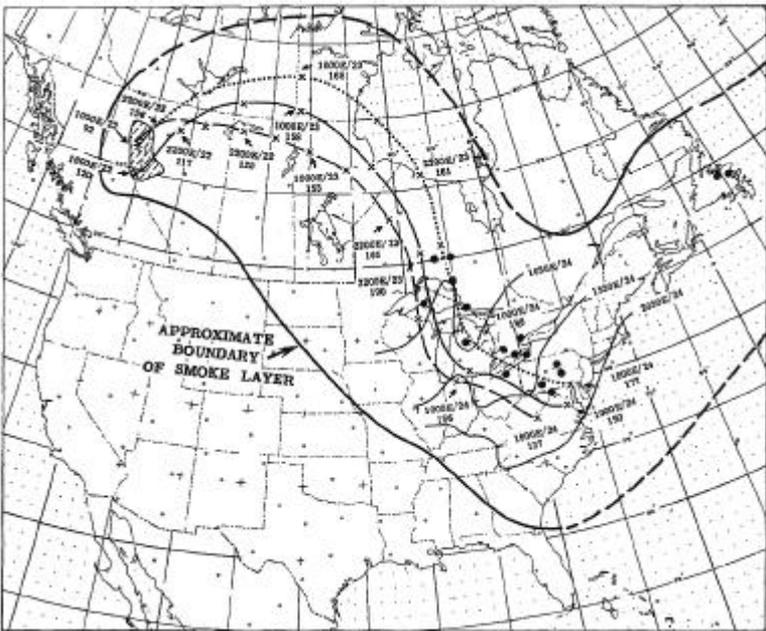


Figure 1: Trajectories of air parcels calculated on isentropic charts of $q=312^\circ$ A. Dashed hatching indicates fire area. Three-digit numbers by trajectory points are heights in hundreds of feet. Large dots near Great Lakes mark stations reporting greatly diminished daylight on September 24. Large dots in Newfoundland mark the same condition on September 25. Dashed parts of smoke boundary are problematical. Thin solid lines across the Great Lakes and eastern United States are isochrones at 5-hour intervals on September 24 showing southeastward progress of the smoke layer.

During week before the "Dark Day," a peat muskeg fire that had been smoldering for years 75 miles north of Edmonton was activated

by high winds. The smoke from this fire joined more the scores of other fires burning in Alberta and British Columbia. Temperatures were in the high 80's and winds of over 40 mph were driving the fires over more and more square miles of western Canada. At some point the fires crossed the Alaskan Highway, cutting telegraph connections with Alaska. Planes were unable to land and were forced to use oxygen masks over the greater than 60,000 square miles of burning timber and brush lands.

The Darkness on the Move

The smoke cloud started riding the jet stream to distant areas. It traveled east-northeast and reached the northern western shores of Hudson Bay on Saturday morning. Then it turned south. At London, Ontario, a napping woman called a radio station when she awoke to darkness wondering if she had slept through the entire day.

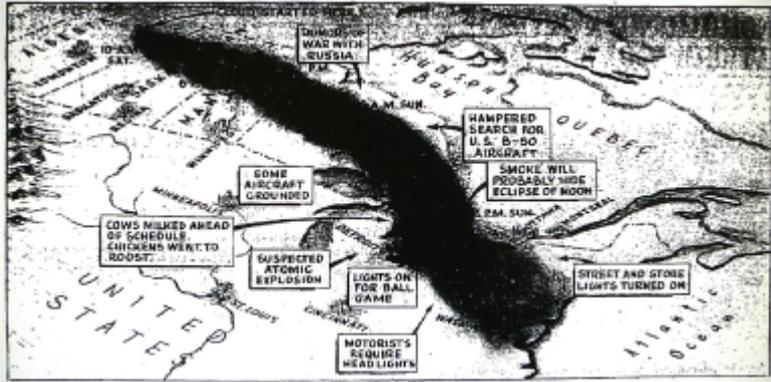


Figure 2: *The Toronto Star's Depiction of the Cloud's Passage*

In the U.S., for some people the first hint of something strange was an announcement on the radio that lights were being turned on at the ballpark in Cleveland. At 1:30 the sky began to turn a sickly yellow by most accounts, although some saw green and others orange-yellow. Some reported a smell: most of those smelled smoke. One man, in Warren, Pennsylvania called it a “strange, almost chemical smell” and suspected a government experiment. It took about 15 minutes to half an hour by most estimates to go from sun to midnight dark. The duration was about an hour.

The darkness was reported as far south as Knoxville, Tennessee. In Cory, PA, one observer noted that the sun shone through the cloud as a faint blue orb, and that the moon was blue when it rose that evening. Coincidentally, there was an eclipse of the moon that night. The Corey report also mentioned a smell: it did not smell like wood but,

instead, smelled like a smoldering wet bog.

Some of the more unusual reports involved the aftermath of the Dark Day. One group announced that there was a concentration of birth defects in their area nine months after the day. Another source reported increased cancer rates. You can make of that what you will: the data are too sparse to allow drawing a conclusion in either case. Temperature reports spoke of cooling. In Corbin, Kentucky the thermometer slid to 38 degrees.

In general, there was no panic. People continued their normal routine with the exception that their lights were on to assuage the darkness. Some Bible illiterates thought it was the end of the world but, although the thought may have entered many minds, most knew that according to Scripture the world is not going to end that way. Mostly people blamed the government, or the Russians, or that space aliens were up to something, this being three years since the Roswell incident.

In Jamestown, New York, the Weather Bureau issued a special advisory, but at 2:15 telephone calls started to flood police agencies and *The Post-Journal* and *The Jamestown Sun*. The *Sun* took 200 calls in one hour: The Jamestown Telephone Corp. sent taxis out to pick up nine extra operators to handle the load. Birds went to roost, cattle came in for milking, cocks crewed when the sunlight returned.

In the early 1980s, in Busti, New York, a chemistry teacher, a certain Mr. Wheeler of Greenville, PA, told his class about the Dark Day and added that in 1950, before he retired to teach chemistry, he worked for a chemical company and that the company was working on some experiments to turn the sky black. He mentioned it had something to do with cloud seeding and man-made weather.

The Philadelphia Incident

In Philadelphia, the sun turned lavender. Philadelphia scientists were the first to discredit the reports that Canadian forest fires could have caused the change in the sun's color. All agreed that it was "unique," but they admitted that the odd coloration was probably due to peculiar formations of ice crystals in the smoke, and noted that the temperature had dropped rapidly and that the weather was cooler than normal.

The notorious Philadelphia story associated with Dark Sunday actually occurred two days later, on 26 September. The AP story on the incident reads as follows:

Four Philadelphia policemen think they know what happens to flying saucers—they dissolve.

Patrolmen John Collins and Joseph Keenan reported last night they saw a mysterious object about six feet in diameter

floating to earth in an open field.

They summoned Sgt. Joseph Cook and Patrolman James Casper. Then they approached the object and turned on their flashlights. Patrolman Collins tried to pick “the thing” up. The part touched by his hand dissolved, he said, leaving a sticky, odorless residue. Within half an hour the entire object had evaporated. It was so light, the policeman reported, it had not even bent the weeds on which it had rested. Sergeant Cook notified the FBI but unfortunately, there was nothing to show F. B. I. Agents except a spot on the ground.

The UFO reference in this article is tongue in cheek, but the FBI had to take it seriously. Since the landing place was within half a mile of the Philadelphia Gas Works, industrial pollution was one potential explanation for the blob. Could some scum have been bandied about in the upper atmosphere and dropped out when the jet stream settled down? Maybe, but not likely. However, the cloud did persist over the eastern US until 29 September. The Philadelphia incident inspired the 1958 horror movie, *The Blob*.

Pilots Weigh In

A number of pilots flew through, above, or below the smoke and had varying explanations. One of the earliest reports was that of Flight Lt. J. Jaworsky:

Flight Lt. J. Jaworski, who was operations officer of the Northwest Air Command of the Royal Canadian Air Force, left Whitehorse in the Yukon Territory, at 4 p.m. Friday in a Dakota aircraft, i.e. a military DC-3, with freight and passengers bound for Edmonton. Two of the passengers had been diverted when their earlier flight was unable to land at Fort Nelson, B.C. Jaworski was able to put down there, but heavy smoke had nearly prevented him from finding the landing strip. The commanding officer at the fort told Jaworski that two days earlier he had been forced to turn back on a flight to Fort St. John because of turbulence extending up to 14,000 feet and smoke so thick he couldn't see the instruments in the cockpit. He had even been forced to use oxygen to breathe.

Jaworski avoided the worst area on the second leg of his flight and emerged, from the smoke 80 miles south of the regular air route. He had observed four major fires between Fort Nelson, B.C., and Grande Prairie, Alberta, including the one that had ignited June 1 plus some smaller fires west of the Alaska Highway. He also saw an almost continuous line of fire in a 200-mile ex-

pans from Peace River, Alberta, to the Rocky Mountains plus 50 separate fires south and west of Dawson Creek, British Columbia. Jaworski also noted that: “The whole body of fire and smoke seemed to be moving to the northeast before the wind.”

Another Air Force pilot noted that,

The event was the result of a government experiment using powdered silver nitrate to seed clouds as a cover for our bombers on future missions and that the cloud floated across the country from New Mexico.

The path raises doubts as to the authenticity of this report, which appears to be due to a third party instead of the pilot himself.

A civilian pilot from Erie, PA also weighed in:

My name is Cliff Shilling. I remember that day in the early ‘50s. I was a radio and TV announcer in Erie and that Sunday I was in my Piper Cub airplane flying south to Brookville, Pennsylvania, my hometown. When I looked north toward Canada and saw the big, dark area, I would fly the plane in a circle occasionally to watch and see what it might be. I noticed as I flew south that it was closing in on me. It took me an hour to get to Brookville, and just as I was landing I could smell wood burning like smoke. I wasn’t on the ground more than 15 minutes before it was pitch dark.⁵

Another airplane pilot who landed at LaGuardia Field, NY said the smoke base was at about 14,000 feet altitude and its top at about 17,000 feet. It was moving eastward at about 35 miles an hour.

Trans-Canada Airlines planes flying at 14,000 feet over the Great Lakes reported a strong smell of wood smoke. Upon landing it was found that a thin, pale brown, oily film covered the aircraft.

Gary Michaels of Grampian, PA also recalls the event. He was the sixth of eight children and remembers being “scared to death” of the darkness. He was seven years old at the time. Gary often thought back on the event and found the forest-fire cause lacking credibility.

As an adult, Gary worked for a bank in Grampian. Sometime in the early 1980s a retired Air Force pilot, a Vietnam veteran, started working at the bank. Gary asked him for any explanation for the dark day.

The veteran answered that it was still a topic of conversation

⁵ Quoted in Rhodes, Betty Matteson, 2012. *Black Sunday*, (Missouri: Lulu.com), pp. 47-48.

among pilots of that time. According to that Air Force pilot, tensions between the Soviet Union and the United States were so high that a Soviet attack was three weeks away. The Dark Sunday event was a cloud seeding experiment designed to darken the cities so they would appear the same as open fields to the Soviet bombers. That way the Soviet bombers could not distinguish urban targets. (Radar was not nearly as sophisticated at that time as it is now.)

Tensions between the “free world” and those behind the “iron curtain” had been strained by the blockade of Berlin by the communists whose goal was to cut off the highway and railroad lines to Berlin and so to starve West Berliners into surrender. The Allies (U.S., France, and England) then airlifted the needed supplies to Berlin, an operation called, “The Berlin Air Lift.” The Air Lift lasted eleven months, ending in May 1949.

Then, too, the Korean War had started 25 June 1950, which certainly did not help assuage war fears among the people in the cloud’s path.

In connection with this realistic account, I find it interesting that there was a resurgence of explanations in the early 1980s by retirees who, although not directly involved in the events, spoke of cloud seeding as the reason behind the Black Sunday. Of all the “conspiracy” explanations, this one is the most realistic.

Across the Atlantic Ocean

By 26 September, the smoke cloud had crossed the Atlantic Ocean and covered the British Isles. During the day the sun’s color was blue. In the evening, when the moon arose, it was blue in color: an actual blue moon.

Such truly blue moons have happened before. They accompany forest fires, as well as volcanoes. After the 1883 explosion of Krakatoa in Indonesia, blue moons and blue suns were observed around the world. The particles in the dust or smoke scatter the red end of the spectrum, leaving an excess of blue.

Astronomers have two definitions for the term “blue moon.” One definition happens when two full moons occur in one month. An older definition of blue moon is the third full moon of four occurring in one season. The 500-year-old expression “once in a blue moon” is thought to predate the calendar meanings of the term.

The Astronomer Royal of Britain, who is in charge of things astronomical and meteorological, sent an airplane up to 40,000 feet to sample the air and to document the occurrence of the blue sun.

As I, your editor, continued the progress of the smoke from west to east onto the European Continent, it was as if a long-dormant memory was arising in me. So I decided to call my aunt in the Netherlands,

the last survivor of my parent's generation in my family. I skyped her and asked her if she remembered a dark day in 1950. Her memory was vague; she thought it was "much earlier, around 1935." The 1935 dark day was due to dust and it, too, survived the Atlantic crossing.

During our conversation my memory clicked. To my recollection, we (my mother, 3-year old sister, and 5-year old me) were visiting my paternal grandfather's bakery one afternoon when darkness set in. My uncle, who worked in the bakery with my grandfather, went out to look at it. I remember no description being given. The rest of us, least of all me, did not go outside since we were located on a busy dike and the sidewalks were narrow.

The effects of the smoke traveled eastward to at least Siberia. But the after effects lasted much longer than that. Around Thanksgiving, 1950, there was a big snowfall. The dust from the fire was regarded to be the cause of the snow. The winter of 1950-1951 was also unusually snowy and cold; again, a likely aftermath of the smoke as it circulated around the northern hemisphere.

Conclusion

Since some of the fires were deliberately set, and given the nervousness of the Cold and Korean Wars at their start, it may well be that the smoke thus generated was seeded not with the intent to precipitate rain, but to induce a cloud cover that could be created on demand to becloud American cities and frustrating bombing raids by the Communists. This was indeed postulated by several Air Force pilots at the time as well as thirty years later—corresponding to a typical retirement period—and I believe this to be quite reasonable.

Unfortunately, I have no first-hand accounts of people who actually did any seeding at the time; so, realistic as the cloud seeding for national defense story may be, I cannot claim it as *the* explanation. And I certainly cannot, neither do I desire it, to dismiss the forest fire story as a hoax simply because of the abundance of first-person accounts attesting to its reality, not to mention the global fire-caused weather effects that lasted a whole year. I also appreciate the accounts of this event that awakened a long-dormant memory of this event that I experienced when I was five years old.

For more details and accounts, I recommend obtaining a copy of the book entitled, *Black Sunday: What really happened that day on September 24, 1950?* By Betty Matteson Rhodes. It is available on the Internet at:

<http://www.lulu.com/shop/betty-matteson-rhodes/black-sunday-of-september-24-1950/paperback/product-20462823.html>

THE “BOMB”: A TERROR WEAPON

This article was published under the same title in *Civil Defense Perspective* which is the newsletter of the Physicians for Civil Defense.¹

“We can turn USA into radioactive dust,” stated Dmitry Kiselyof, head of the new Russian state television outlet, reminding the world that because of some 8,500 nuclear warheads, Russia can do whatever it pleases.

The perceived apocalyptic threat may well have helped keep the Cold War from becoming hot. However, three years after Hiroshima, William H. Hessler warned against reliance on nuclear weapons.² He wrote:

Its rightful place in military policy is very restricted. It is an instrument of *destruction*, not of *victory*. We need to keep it ready for retaliation, to deter an attack.

Scientists may calculate the destructive power of the bomb, but the military is only interested in the results, knowing that very little of the energy expended in warfare has an effect on the enemy. “The more powerful the bomb, the less efficient it is.”

The Hiroshima bomb killed 78,500 people or 15,000 to the square mile. In the fire raids on Tokyo as of 9 March 1945, about 80,000 people were killed. That took about 300 B-29s instead of one. As the population density of Tokyo is perhaps four times that of Hiroshima, it is commonly assumed that an atom bomb would have killed four times as many people in Tokyo and that, therefore, one B-29 with one atom bomb is the equivalent, in killing power, to 1,200 B-29s with full loads of explosives and incendiary bombs. Not so. Total surprise accounted for the high casualty rate in Hiroshima; only a few hundred people were in shelters that would have accommodated 100,000.³

¹ *Civil Defense Perspectives*, 29:(5). Except for ingested radiation measurements I have converted the dosage units of the original article into rads. The rad is a cgs unit, meaning it involves centimeters, grams, and seconds. The “gray” (Gy), is an mks unit, meaning meters, kilograms, and seconds. Thus 0.01Gy = 1 rad = 100 erg/gm. Roughly speaking, 100 rem in a 24-hour period is sufficient to make you sick, but is not fatal.

² Hessler, William H., 1949. “The A-Bomb Won’t Do What You Think,” *Colliers*, 17 September.

³ For instance, police officers were killed or injured in Hiroshima. When the Nagasaki bomb went off not a single policeman in Nagasaki was killed or injured because the Hiroshima police had warned their Nagasaki counterparts to turn their backs to the blast area and cover their exposed skin (with as little as a single sheet of newspaper). —Ed.

Note that an atom bomb is more likely to be used in a surprise attack *against us* than the other way around.

One scientist estimated that at least 1,000 atom bombs would be needed to do the same damage to Russia as was inflicted by the Germans in the Stalingrad campaign alone. Dr. Stefan T. Possony concluded that it would take about 6,500 atom bombs to totally destroy a major enemy's cities.

Hessler noted that the American concept of strategic air power was guiding war into a pattern of blind devastation, from which the U.S., with its urban concentration and high technology, would suffer most disastrously. He noted the importance of American industrial strength and technological superiority (in 1949; it's totally gone now in 2014—*ed*).

Radiation is the effect that Americans fear most. Yet it was responsible for only about 15% of Hiroshima casualties. Moreover, troops could attack through the ravished areas immediately after the blast, wrote Captain Richard P. Taffe in 1952.⁴

The State of the Balance of Terror

The nuclear arms race is by no means over, even if the U.S. no longer competes. While Russia and China are modernizing their arsenals, Barack Hussein Obama has indicated his willingness to cut the U.S. nuclear arsenal by one-third unilaterally; without awaiting congressional approval. That would limit the total to about 1,000 compared with the 1,550 deployed warheads agreed to in the 2010 New START agreement. This means a reduction of 75% to 80% during Obama's term in office, starting from 5,113 in 2009. The George C. Marshall Institute describes it as a "slouching towards zero" policy.

There is "deep uncertainty in estimating the adequacy of nuclear forces," writes Robert Butterworth in April 2013. The most recent American warhead was built in 1991, and the most recent test was 1992. Remanufacturing in the Life Extension Program must use some different materials, the original materials being unavailable because of environmental protection dictates. Critical facilities have not been modernized or even kept in good working order. Judgments on which test-free assessments depend must increasingly be made by people with no direct experience in design and testing of nuclear weapons. All test-experienced physicists will have retired by 2020.

"No more nukes means no more experts," writes Col. J. Douglas Beason (USAF Retired). First stringers know how adversaries store

⁴ Taffe, Richard P., 1952. "I'm Not Afraid of the A-Bomb," *Colliers* 26 January. I have declassified video of Red Chinese troops charging into the blast area while the mushroom cloud was still rising.

their weapons, how they hide emissions, and how to stop a nuclear detonation.

Additionally, nuclear survivability of conventional forces has been neglected for two decades. Unless and until these deficiencies are corrected, if general purpose forces were subjected to a nuclear event the President would not have options, but rather a dilemma: “use nuclear weapons that might not work, or conventional ones that will probably fail,” notes Butterworth.

After caving to Russian demands to discontinue building antimissile defenses in Eastern Europe, O’bama has now offered to restrain antimissile defense in Asia, and cancelled deployment of two destroyers with Aegis antimissile systems. While North Korea has the capability to launch over the South Pole, the U.S. has no early warning or missile defenses devoted to threats coming from the South Pole.

Russia is allocating some \$770 billion from 2014 to 2020 to modernize its military-industrial facilities, allocating up to 20% of its State Armament Program to aerospace defense. A brand new ballistic missile system could be deployed around Moscow this year. While Russia does not describe Iran or North Korea as enemies, it does perceive them as threats.

Some speculate that North Korea may have tested a bomb for Iran. While its first test used a plutonium trigger, the latest may have used highly enriched uranium, the type of weapon being pursued by Iran.

Radiation Terror

On top of devastation by blast and fire, paralysis could ensue on the basis of the least dangerous but most feared effect: ionizing radiation. Fear mongering about low-dose radiation, which has crippled development of nuclear power, began very early, according to Galen Winsor. At Hanford, in a GE fuel fabrication plant, workers initially handled plutonium bare-handed until draconian regulations were imposed without explanation.⁵ Winsor tells how he, while serving as safety officer at a nuclear plant, swam in the pool holding spent fuel rods, and drank the water. Winsor died at age 82 of Parkinson’s disease.

The Linear No-threshold Model vs. Reality

The linear no-threshold model (LNT) is a model used in radiation protection to quantify radiation exposure and set regulatory limits. It assumes that the long term, biological damage caused by ionizing ra-

⁵ A friend who worked with nuclear weapons for the army tells of workers launching the plutonium across the floor by hand to see the resulting lightning. —*Ed.*

radiation (essentially the cancer risk) is directly proportional to the dose. This allows the summation by dosimeters of all radiation exposure, without taking into consideration dose levels or dose rates. In other words, radiation is always considered harmful with no safety threshold, and the sum of several very small exposures is considered to have the same effect as one larger exposure (response linearity). The U.S. government religiously endorses the LNT assumption and any research on rival models is strongly discouraged by lack of funding.

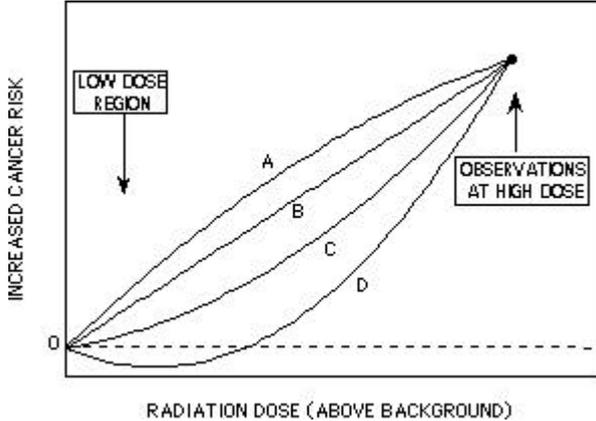


Figure 1 Radiation Dose vs. Chance of Cancer

In Figure 1, the four curves A, B, C, and D represent what the probability is to get radiation sickness. A is called the supra-linear model and is not observed in the real world, B is the government's LNT, which also is not observed in the real world. C is the linear-quadratic, also not observed, and D is the hormesis curve, which is observed. Note that these curves are anchored at two end points: a zero point where no radiation is present and, by definition, no radiation-induced cancer can exist. The other point is where the radiation is quickly lethal.

Prior to the A-bomb, the hormesis curve (D) was used. Physicians recognized that *a little radiation is good for you* [emphasis added]. Not surprisingly, even today the evidence favors the hormesis curve. The beneficial region is the area below the dashed line, called the threshold, which is the background radiation level, that is normal radiation, encountered in the environment. The LNT claims that even the background radiation is dangerous. On the other hand, cancer rates are below the national average in mile-high cities such as Denver, where people typically receive 5 rads per year.

I find the evidence favoring the hormesis curve, which evidence is far greater than I could reasonably list and overwhelms the LNT. Remember, our government wants us to look to it for "protection" so it behooves them to build a fearful environment so that we will look to politicians for "protection."

Atomic Bomb Survivors and Cancer

“The leukemia incidence of 96,000 Hiroshima atomic bomb survivors is compelling evidence that the linear no-threshold model is wrong,” writes Jerry Cuttler. The 1958 data from United Nations Scientific Committee on the Effects of Atomic Radiation (UNSCEAR) fit a hormetic J-curve (D in Figure 1), not a straight line, and clearly demonstrates a threshold for leukemia at 50 rem.

Tubiana et al. also concluded that the atomic bomb survivor’s data did not provide evidence for the LNT, noting that the bombs and fires released far higher levels of non-radioactive toxins. Firefighters always show an increased cancer risk.

Any calculations based on survivors’ data are valid only in the extremely high A-bomb dose-rate range. When applied at environmental levels, the data will substantially overestimate effects.

The importance of dose rate should be obvious when considering that patients receiving radiotherapy may get a total dose ten times greater than the threshold for acute radiation sickness to large healthy parts of their body. Just one day between doses of 100 rad allows the healthy tissue to recover, while the tumor, which gets double the dose, cannot. Without repair, all patients would die before the end of their treatment.

Internal Radiation

Consumption of food containing cesium-137 (a radioactive element found of milk) and other radioactive isotopes could affect persons far from the scene of an event and has been a huge concern about Fukushima.

In 1987, a Cs-137 source was removed from an abandoned cancer therapy clinic in Goiânia, Brazil, and sold to a scrap yard. Fragments fell into the hands of people who were intrigued by its blue light, and 249 people were contaminated, of whom 28 suffered skin burns which required surgery in some cases. Four people died from acute radiation syndrome (ARS), one of whom had ingested more than a billion Bq (a Bq is a unit measuring how many particles are emitted in one second) amounting to a monthly dose of 650 rad, and three who had ingested between 100,000 and a million kBq. In 25 years, there have been 0 (zero) cases of cancer in the contaminated persons. In addition to receiving significant external radiation, 69 persons had ingested at least 10kBq (10,000 Bq) of Cs-137 (monthly dose more than 0.0065 rad).

At Fukushima, the adult dose of Cs-137 is less than 12 Bq in all cases, (compare those exposed to 100,000 to a 1,000,000 Bq, men-

tioned in the previous paragraph, who have experienced no cancer) and in children less than 1.4 kBq, between November 2011 and February 2012. Normal body content of potassium-40 (K-40) is 4,400 Bq.

Allison concludes: “The Cold War gave a premium to nuclear angst with its threat of a holocaust. But, only the blast and fire of a nuclear weapon live up to such a reputation, not the radiation *whose main influence is psychological* [emphasis added in report].

In mice exposed to Cs-137 for 400 days, there were no radiation effects on cancer or chromosome aberration at dose rates between 20 and 400-fold higher than background. In the 800 rad/day group, there was a significant increase in cancer, which was two to three-fold less than for a dose rate of 100 rad/minute on the same strain of mice.

Nevertheless, write Tatsumi and Tanooka (*ibid.*) the atomic bomb dose rate is applied at Fukushima, [which leads to an] overestimation of...risk results [imposing an] unnecessary psychological and economical burden.

Radiation Standard Must Be Changed

The aftermath of Fukushima showed the human cost of the LNT-based limits of radiation exposure. The 1934 “tolerance dose” of 0.2 roentgen/day (6.80 rem/year) was based on 35 years of medical experience. It “was changed in the 1950s because of strong political pressure by scientists and other influential people to create a social fear of low radiation from a-bomb testing during the arms race and abhorrence of nuclear war,” writes Jerry Cuttler.

At a dose rate of 110 rad/y, which is more than 1,000 times the recommended limit of 0.1 rad/y for the general public, the hematopoietic system provides full function and stability without increased tumor incidence.

The antinuclear LNT idea has survived 58 years despite lack of evidence of genetic effects or congenital malformations in A-bomb survivors. In fact, low radiation reduces the normal mutation rate in fruit flies by a factor of three, Cutler stated to the Canadian Nuclear Safety Commission on 25 June 2013.

The standards are not “conservative.” As Swedish radiobiologist Gunnar Walinder stated in 1995, “The LNT hypothesis is a primitive, unscientific idea that cannot be justified by current scientific understanding.” Further, “as practiced by the modern radiation protection community, the LNT hypothesis is one of the greatest scientific scandals of our time.” Victims, Cuttler said, suffered a “psychosis of fear” (*ibid.*).

Farmer Stays Near Fukushima to Feed Animals

Constantly exposed to 17 times the “safe” level of radiation, Naoto Matsumura is the only remaining inhabitant of the town of Tomioka, six miles from the Fukushima nuclear plant. He left for a short time, but returned because he couldn’t endure the thought of animals left to fend for themselves. He now feeds his own fifty cows and two ostriches and makes the rounds to feed neighbors’ animals as well. Unfortunately, he was too late to save some of the hundreds of cattle left to starve in a barn.

Researchers at the Japan Aerospace Exploration Agency told him that he had the highest radiation level of anyone they had tested—but he wouldn’t get sick for 30 or 40 years. Mr. Matsumura, disobeying government orders, intends to die at home.

The Japanese government has told some evacuees that they will never be able to go home [I would not be surprised if those evacuees have the choicest properties. —*Ed.*] Areas where radiation doses exceed 5 rad/year [as is received by most places a mile or more above sea level in the world’s tropical and temperate zones,] are designated “no go” zones. Because of radiation fears, only 12% of evacuees in Tomioka, one of the most heavily contaminated zones, want to go back.

As of August 2013, **the number of people who have died from evacuation-related illnesses stood at 1,539, just short of the 1,599 deaths caused by the tsunami.** [Emphasis added. Translation: obeying government warnings about radiation dangers is infinitely more likely to kill you than would ignoring them.]

CAPITALISM VERSUS SOCIALISM

Mike Rosen¹

Leftists love to complain and they especially love to whine about greed. They just don't get it. A market economy is based on incentives. The prospect of financial reward is what motivates most people to work, save, and invest. There's nothing particularly ingenious about a system that recognizes this. It's intuitive. In *The Wealth of Nations*, Adam Smith didn't invent an economic system; he merely observed and analyzed what people do naturally when left to their own devices.

Socialism on the other hand, *is* an ingenious system, an invention of coercive economic utopias based on the notion that human nature can be elevated to a collective, altruistic plane. Its myriad failures in the real world include places such as the former Soviet Union, North Korea, and Cuba. The socialist democracies of Old Europe are rapidly proceeding down that road.

It's instructive to note that the recent economic rise of communist China is directly related to its increasing embrace of good old-fashioned capitalism, a system that has ably served its Asian neighbors in Taiwan, South Korea, and Japan.

Greed is a word leftists use to describe that conservatives call *ambition*. Ambition and reward are what fuel prosperity in a market economy. When you impose penalties and restrict rewards on economic activity—such as by excessive taxation—however noble your motives, there are consequences. You get less work, savings, investment, and output. If that weren't the case we could tax ourselves rich.

The fatal shortcoming of socialist economies is that they don't sufficiently reward excellence, so, predictably, they get less of it. It's that fundamental conflict with human nature that seals socialism's ultimate doom.

To leftists, greed is when someone else makes more money than they do. The problem with that word is that it's impossible to objectively define. Is a cab driver that chooses to work 60 hours a week instead of 40 greedy? According to whom? Suppose he wants the extra income to send his children to college? Suppose he wants to blow it in Las Vegas? A market economy doesn't ask these questions. They're irrelevant to public policy. Regardless of his motivations, a farmer who produces twice as much as his neighbor has added that much more to the nation's product. He should be rewarded. The tax collector will relieve him of quite enough of the fruits of his labor. What he does with the rest is his business.

¹ Rosen, Mike, 2005. *The Colorado Springs Gazette*, 27 May, pg. M9.

Some cancer researchers may be motivated solely by humanitarian desire to relieve suffering. That's wonderful. Some may be seeking fame and fortune. What's truly important to society is that a cure be found. Whatever encourages that outcome is good—even if someone might have the bad manners to get rich as a result. Three generations of Americans who have not had to fear the disease of polio couldn't care less about the motivations 50 years ago of Dr. Jonas Salk.

Yes, there are greedy people in the world. There are also lazy people and dishonest people. And there will always be. It's an elusive moralistic exercise to attempt to calculate where ambition ends and greed begins. Whatever you call it, the trick is to maximize human energy for the private and public good.

Adam Smith summed it up nicely more than 200 years ago, when he observed that in a market economy, people pursuing their own prosperity are inadvertently moved as if by an "invisible hand" to promote the interests of society as a whole. They do this by creating wealth—for themselves and, in the process, for others.

Any society that becomes obsessed with restricting the accumulation of personal wealth will destroy initiative and creativity. The way the world works, if you want the poor to get richer, you have to make it possible for others to get richer, too.

Leftists have little regard for the creation of wealth. They take that for granted. Their fun comes in redistributing income and wealth. It may be difficult to define greed, but it's easy to define covetousness. That's the greed of leftists for governmental power to confiscate the property of others.

HOW TO TELL TIME BY THE STARS

Gerardus D. Bouw, Ph.D.

How did the ancients tell time on a starry night? Except for the richest of people no one could afford a clock; and wristwatches were not invented yet. Of all people, Shakespeare gives us a hint how time was reckoned at night before clocks proliferated.

In Shakespeare's *King Henry the Fourth*, two Wagoners are talking when one says to the other, "Heigh-ho! An' it be not four of the day, I'll be hanged; Charles' Wain is over the new chimney, and yet our horse is not packed." Charles' Wain is just another name for the Big Dipper. The wagon driver knows that at that season, when the Big Dipper is by the new chimney, it is four o'clock in the morning. In the Northern Hemisphere, the Big Dipper was widely used to tell time. In this article we'll remove the mystery of how it was done so that you, too, dear reader can know how to tell time by the stars.

Imagine you are camping out in a wilderness area, an area without cell phone service. You awaken in the middle of the night and wonder what time it is. You check your watch and then recall that you needed the battery replaced. But it is a clear night: the stars are shining brightly and the Milky Way appears to light the sky.

You search for the big dipper and locate it. The two stars in the leading edge of the dipper are called the pointers because they point to Polaris, the Pole Star. Good so far, but what do you need more?

The circumpolar stars do make a good clock. The only problem is that the hour hand of our every-day clocks makes two rotations per day whereas the sky makes only one. Now if only you can remember where the dipper's pointers were last evening when you checked which way is north. You remember that the pointers were due west (to the left) of Polaris and that you checked at 9:00 p.m. The dipper is now right-side up near the horizon and the pointer stars point straight up to Polaris. The sky has rotated a quarter of the way (counterclockwise), which amounts to a quarter of a day: six hours. You correctly conclude it is 3 a.m. If you are truly experienced in telling the time by this method you can also estimate the date. In our example it is the first of July.

To freely use this clock you need to know the 12 positions of the pointers. The 12 positions are the ways the pointers are pointing at some time—say 9:00 p.m.—at the start of each month. These positions are pictured in Figure 1. Figure 1 gives you these positions as well as one other constellation: Cassiopeia. The dipper's pointers extended to Polaris forms a clock hand, as seen in the figure.

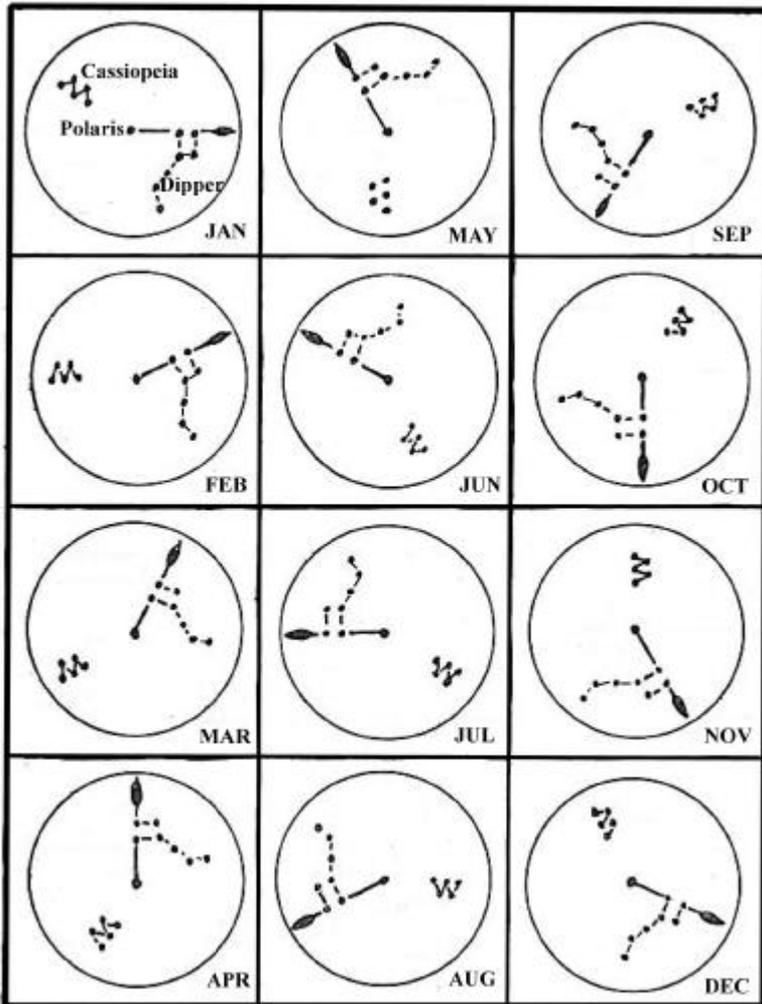


Figure 1: The position of the Big Dipper at 9:00 p.m. on the first of each month.

Assume that it is the first of January, 9:00 p.m. The star clock looks like the top, left panel. The dipper's pointers are horizontal in the 3 o'clock position. Since the sky's rotation is clockwise, the panel marked DEC (December) shows where the dipper is located two hours later, at 11:00 p.m. Likewise, the November panel shows the position of the dipper at 1 a.m. 2 January. The October panel is a quarter turn, i.e. six hours later than our starting panel at 9:00 p.m., namely 3:00 a.m. Remember that there are 12 panels corresponding to 12 months

but there are 24 hours in a day; thus each month's panel is 2 hours different from the previous and following panel.

Each following month is two hours counterclockwise from its predecessor. Thus the dipper's 9:00 position on July 1 proceeds to the 8:00 position on August 1, 7:00 on September 1, and so forth. Remember that the monthly clock position's one-hour change per month is actually two hours of time on the sky's 24-hour clock.

If you are too far south to see the dipper's pointers, you can use the position of Cassiopeia instead.

Finally, contrary to man's policies, the universe does not recognize daylight savings time. Thus, for those months when daylight savings time is in effect, you need to add one hour to the hour reading. Thus, if July is a daylight-savings time month (as it is), instead of 9:00 start reading it as 10:00. That is, in daylight saving time, the charted position of the dipper is actually 10 p.m. daylight savings time.

Feel free to make a copy of the chart to use it to learn to tell time throughout the year at night. With some practice you'll readily be able to recognize the pointer-clock's positions and time throughout the year.

PANORAMA

Soul, Spirit, and Quantum Mechanics

A couple of years ago, the news media was abuzz with a physical theory connecting the soul with quantum mechanics. The claim was that quantum substances form the soul and that these are conjoined as part of the fundamental structure of the universe.

The theory, which is supposed to account for life after death, is the brainchild of Dr Stuart Hameroff, Professor Emeritus at the Departments of Anesthesiology and Psychology and the Director of the Center of Consciousness Studies at the University of Arizona. He advanced the quasi-religious theory on a television documentary, *Through the Wormhole*.

A near-death experience happens when quantum substances which form the soul leave the nervous system and enter the universe at large, according to a theory proposed by two eminent scientists, Hameroff and Sir Roger Penrose. Consciousness is a program for a quantum computer in the brain, which can persist in the universe even after death, explaining the perceptions of those who have near-death experiences. It is based on a quantum theory of consciousness he and British physicist Sir Roger Penrose have developed which holds that the essence of our soul is contained inside structures called microtubules within brain cells. A microtubule is any of the proteinaceous cylindrical hollow structures that are distributed throughout the cytoplasm, which is the protoplasm outside the nucleus of eukaryotic cells, providing structural support and assisting in cellular locomotion and transport. A eukaryotic cell is a single-celled or multicellular organism whose cells contain a distinct membrane-bound nucleus.

Penrose and Hameroff argue that our experience of consciousness is the result of quantum gravitational effects in these microtubules, a theory which they dubbed orchestrated objective reduction (Orch-OR).

Thus it is held that our souls are more than the interaction of neurons in the brain. They are in fact constructed from the very fabric of the universe—and may have existed since the beginning of time. In my own understanding, the theory parallels the notion that consciousness is an integral part of the universe: that consciousness is entangled with the omniscience of God. Indeed, any such awareness of our environment is the very foundation of intelligence.

With these beliefs, Dr Hameroff holds that in a near-death experience the microtubules lose their quantum state, but the information within them is not destroyed. Instead it merely leaves the body and returns to the “cosmos,” which is an atheist’s way of saying it returns to the God who gave it. When patients have a near death

experience their quantum soul is released from the body and re-enters the cosmos, returning to the original quantum state when they are revived.

Dr Hameroff told the Science Channel's *Through the Wormhole* documentary: "Let's say the heart stops beating, the blood stops flowing, the microtubules lose their quantum state.

"The quantum information within the microtubules is not destroyed, it can't be destroyed, it just distributes and dissipates to the universe at large. If the patient is resuscitated: revived, this quantum information can go back into the microtubules and the patient says 'I had a near death experience.'"

Hameroff adds: "If they're not revived, and the patient dies, it's possible that this quantum information can exist outside the body, perhaps indefinitely, as a soul."

At this point I have to interject because Hameroff and Penrose appear to be in over their heads. The soul of man is every wit as mortal as man's body. Scripture says, "The soul that sinneth, it shall die." (Ezekiel 18:4, & 20.) It is the spirit that is immortal. Our spirits come from God and return to him at our deaths (Ecclesiastes 12:7). In Revelation, the death of the body is counted as the first death, and the death of the soul is counted as the second death (Revelation 2:11; 20:6, 14; and 21:8). But if we are born of the Spirit, we have eternal life which life was breathed into us, making our soul, which is the new man with a new heart, immortal.

Needless to say, the Orch-OR theory has come in for heavy criticism by flesh-bound thinkers and remains controversial among the atheistic "scientific" community. Nevertheless, Dr Hameroff believes that research into quantum physics is beginning to validate Orch-Or, with quantum effects recently being shown to support many important biological processes, such as smell, bird navigation and photosynthesis.

CREDO

The Biblical Astronomer was founded in 1971 as the Tychonian Society. It is based on the premise that the only absolutely trustworthy information about the origin and purpose of all that exists and happens is given by God, our Creator and Redeemer, in his infallible, preserved word, the Holy Bible commonly called the King James Bible. Any scientific endeavor which does not accept this revelation from on high without any reservations, literary, philosophical or whatever, we reject as already condemned in its unfounded first assumptions.

We believe that the creation was completed in six twenty-four hour days and that the world is not older than about six thousand years. We maintain that the Bible teaches us of an earth that neither rotates daily nor revolves yearly about the sun; that it is at rest with respect to the throne of him who called it into existence; and that hence it is absolutely at rest in the universe.

We affirm that no man is righteous and so all are in need of salvation, which is the free gift of God, given by the grace of God, and not to be obtained through any merit or works of our own. We affirm that salvation is available only through faith in the shed blood and finished work of our risen LORD and saviour, Jesus Christ.

Lastly, the reason why we deem a return to a geocentric astronomy a first apologetic necessity is that its rejection at the beginning of our Modern Age constitutes one very important, if not the most important, cause of the historical development of Bible criticism, now resulting in an increasingly anti-Christian world in which atheistic existentialism preaches a life that is really meaningless.

If you agree with the Credo, please consider becoming a member. Membership dues are \$35 per year.

To the law and to the testimony: if they speak not according to this word, it is because there is no light in them.

– Isaiah 8:20

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