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# **If You Can't Stand the Heat...Don't Blame Global Warming**

*By Ron Bain*

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Seventeen consecutive days with high temperatures above 90° that wilted Denver. Raging forest fires that threaten homes and parklands throughout the Western United States. Heatwaves in California and Colorado that have utility bills soaring and tempers flaring.

It must be global warming, mustn't it?

"Global warming is a strategic threat," writes Vice-President Al Gore in his 1992 campaign book, "Earth In The Balance." This threat endangers "the earth's ability to regulate the amount of heat from the sun retained in the atmosphere."<sup>1</sup>

At the end of his book, Gore refers to "the faith that is so essential to restore the balance now missing in our relationship with the earth."<sup>2</sup> Gore seems more willing to put his faith in junk science than rational thought and the scientific method.

Gore's theory is that minor increases in mean global temperature over the past 120 years are due to additional "greenhouse gases" -- primarily carbon dioxide, water vapor, methane and nitrous oxide -- that man has placed into earth's atmosphere. Scientists refer to this as "anthropogenic," or human-caused, warming. However, scientists are cautious to use terms such as "feasible," "possible" or "likely" when referring to measurements that indicate worldwide warming trends. Not so the media.

The Global Historical Climatology Network claims to have temperatures for all latitudes and longitudes since 1880 (but many are extrapolations). The National Weather Service was founded in the U.S. in 1874 and began recording scientific measurements of American temperature extremes. This 120- to 125-year period coincides almost precisely with the Industrial Revolution, the invention of the internal combustion engine and man's rise to technological preeminence. Temperatures from times prior to 1874 are determined from flood records, tree rings, ice cores, ocean sediments and historical observations. Satellite measurements of atmospheric temperatures have been made since the late 1970s.

One of the problems with global warming theory is that it relies too heavily on a very large set of assumptions:

- ☞ that century-old temperature records are accurate;
- ☞ that tree rings, ice cores, flood plains and ocean sediments can be precisely interpreted;
- ☞ that the modern earth is a steady-state, unchanging planet receiving a constant, invariable amount of heat from the sun;
- ☞ that burning of fossil fuels is the only explanation for increased atmospheric CO<sup>2</sup>;
- ☞ that disaster would befall civilization if the earth's average temperatures rose by a few degrees.

## **I. 19th and 20th Century Temperature Records: Are They Complete?**

The National Weather Service was founded in 1874 and, coincidentally, Colorado experienced the hottest July on record that year, when there were 18 days in a row with high temperatures above 90°. That record was tied in July 1901. It was during the Dust Bowl that Colorado recorded its next hottest July months: 1934 and 1936 respectively. The month of July 2000 was only the fifth hottest July on record in Colorado. Doesn't it make sense that, if global warming is a fact, any location on the face of the earth would be breaking all-time temperature records with each successive year?

According to the Center for the Study of Carbon Dioxide and Global Change, studies of tree ring densities for the past 70 years contradict the instrumental (thermometer) records depicting unprecedented warming during the 20th century. "We believe the reason should be obvious: the instrumental temperature record is simply wrong," editorialized the president and vice-president of the Center, Drs. Craig Idso and Keith Idso.

"We have no real thermometer records in sufficient density for much more than the last 100 years," writes Patrick Michaels, Ph.D., in ***Environment Climate News*** (August 2000). When climate researchers claim to have temperature records going back 1,000 years or more, they are "reconstructions," Michaels points out.

In fact, the notion that there has been a worldwide network of temperature recording stations for 120 or 125 years is simply false. There were a few measuring stations in the United States and Europe back then, but the poles, Africa, Asia, South America and Australia went for decades without official measuring stations. Ships at sea during the 19<sup>th</sup> century provided some temperature readings from various parts of the world.

To confirm this information, just check out a few web sites, like that of the National Climatic Data Center in Asheville, N.C.: "Most station records are essentially complete for at least 40 years; the latest beginning year of record is 1948. Records from 158 stations begin prior to 1900, with that of Charleston, South Carolina beginning the earliest (1871)."

Or the web site entitled Global and Hemispheric Annual Temperature Variations Between 1854 and 1991: "This data set contains estimates of global and hemispheric annual temperature variations, relative to a 1950 through 1979 reference period."

The synopsis for the Global Historical Fields web site begins with the following disclaimer: "This version has no data for the Southern Hemisphere."

So, claims that the entire earth has been getting warmer for the past 125 years are largely based on pre-1900 records from less than 200 measuring stations located only in the United States and Europe. More accurate satellite measurements of troposphere temperatures began in 1979. The most recent interpretations of satellite data, taking into account decaying orbits, indicate a tiny increase in global temperatures but not one that corresponds with surface temperature measurements or computer models of global warming expectations.

## **II. Can Historical Temperatures Be Measured Accurately?**

Just as the source data for the last 125 years is suspect, other evidence that global warming theorists rely on is also shaky. This evidence consists of counting and analyzing tree rings, examining the air found in glacial ice pockets, studying silt and effluvia left behind by major 100-year or 500-year floods, and taking core

samples of the ocean floor to sift through sediment.

All scientific data must be interpreted. One of the great problems with global warming theory is that variance in data interpretation by scientists is great, and is accentuated when discussions of tree rings, ice cores, flood plains and ocean sediments arise. Yet, it is this disputed data on which global warming theory so precariously rests.

Recent headlines in Canadian newspapers trumpeted "Greenland's Ice Sheet Is Melting." Further examination of the pertinent journal article by the Center for the Study of Carbon Dioxide and Global Change revealed that "the 'melting' of the ice sheet was not a directly-measured quantity, but an *estimate* derived from an *interpolation* based upon a *calculation* of an admittedly *hypothetical* thinning of the ice sheet."

So far, less than half of the world's glaciers have been inventoried. "There are an estimated 160,000 glaciers in the world, only about 67,000 of which have been inventoried over 50 years or more," according to the Center's Idso brothers. "Before glacier data can be used to address critical problems pertinent to the world's economic and environmental health, the data need to become more comprehensive, more homogenous in detail and quality, and managed within Geographic Information Systems."

Global warming theorists predict that higher temperatures will evaporate more water vapor into the atmosphere, exacerbating the warming effect while simultaneously causing floods and droughts, depending on your hemispheric location. The U.S. Geological Survey has been tracking water volume in 395 streams since 1914 and reports higher volumes on average but "no signal of a trend toward increased flooding." The journal **Geophysical Research Letters** reports damage from floods and droughts was on the rise in 1990s, noting that most experts attribute this to people moving into flood plains or into areas with unreliable water supplies. Apparently, America's waterways have largely been tamed: the journal reports that since the 1940s, streams and rivers are carrying more water but causing less damage.

Global warming theorists also predict that increased levels of CO<sup>2</sup> in the atmosphere will have adverse affects on flora and fauna. Paleoclimatological tree ring studies are assumed by researchers to reflect unchanging CO<sup>2</sup> concentrations throughout history and to instead reflect changes in air temperature and precipitation levels. "People are using long-term tree-ring chronologies to create a climatic history of the earth that exhibits late-20th century warming that never occurred!" states the Center for the Study of Carbon Dioxide and Global Change.

Increased CO<sup>2</sup> concentrations actually help growing plants with photosynthesis and transpiration, yet only two climate change studies in 16 years have taken this into account. One global warming proponent, K.R. Briffa writing in **Quaternary Science Reviews**, clearly states the "equations upon which our reconstructions are based may be compromised if the balance between photosynthesis and respiration is changed."

On a related topic, the "leaf area index" - scientists' definition of how much of earth's land has been altered by man - is actually closer to 8% as opposed to the previously estimated 45%, reported the University of Virginia's Robert E. Davis, an associate professor of environmental science, in **Environment Climate News** (Aug., 2000).

The assumption relating to ocean sediments (considered to be evidence of how warm or cold the oceans were at a given time in history due to sand and calcium deposits) is that sand or the calcified shells of tiny animals fall straight down to the ocean floor, without being transported by ocean currents.

### III. Could it Be That It's the Sun That's Getting Warmer?

Ultimately, there are only two sources of heat affecting the surface of the earth: the sun and geothermal forces such as volcanoes, steam vents and geysers. The greenhouse effect, on which the biosphere depends to filter and retain solar radiation, reflects enough of the sun's heat back to the earth's surface to maintain conditions for life.

"The general impression of most people is that the earth is not producing the temperature increase geothermally," stated David Rind, senior scientist at the Goddard Institute of Space Science. The earth produces geothermal heat at a rate "several factors less than the solar input factor," Rind added.

So, it's not volcanoes that have boosted the earth's average temperature by .4 to .8 degrees Centigrade. Could it possibly be that the sun -- the source of virtually all thermal energy on the face of the earth -- is actually getting warmer?

The first question is: warmer as compared to what and when? Colorado is lucky to have research institutions such as the Laboratory for Atmospheric Science and Physics readily available to answer such questions. LASP's Bryan Toon provided the Independence Institute with a brief history of heat on the earth.

"During 90 percent of the history of life on earth, there haven't been any ice caps. Ice caps are an anomaly. We're in the middle of an ice age right now, actually called an interglacial period as opposed to a glacial period.

Sixty-five million years ago, at the end of the dinosaur age, it was much hotter, there was more carbon dioxide in the air, vulcanism and continental drift. Twenty-five thousand years ago, Chicago was under ice. It's only during the last 10,000 years, called the Holocene period, that the earth has been comparatively warm. These warm interglacial periods usually last only 10,000 years, so the expectation over the next 10,000 years is that the earth will actually be much colder."

What causes these fluctuations in climate on the earth? Scientists have postulated many possible causes:

- cyclic changes in CO<sup>2</sup> and water vapor concentrations in the atmosphere;
- cyclic changes in ocean currents;
- continental drift and vulcanism; and,
- fluctuations in solar irradiance.

Galileo Galilei (1564-1642) refined the spyglass invented by Johannes Kepler and pointed his telescopes at the sun, discovering sunspots in 1612. Fascinated by these anomalous black spots on the face of the sun, "which motion is from west to east and obliquely to the horizon from south to north,"<sup>3</sup> Galileo studied, recorded and tracked sunspots for the rest of his life. He was frustrated, though, by a diminishment in their number in the years immediately before his death.

"The Maunder Minimum refers to a period of particularly low numbers of sunspots from A.D. 1645 to 1715," reports Jakub Niedzwiedz on the [Climate Dynamics and the Global Change Perspective](#) website . "It has been proposed that this period also represents a period of general global cooling due to lowered solar radiation."

"Something happened on the sun" during the Maunder Minimum, also known as the Little Ice Age, Toon said. "Four to five hundred years ago, glaciers were more extended and they moved southward, there was more sea ice, rivers froze more frequently."

Europeans starved en masse when 17th century harvests were devastated by premature winters. "Extreme events occurred during the Maunder Minimum," wrote Neidzwiedz, including "droughts, floods, locust plagues."

Yet, "about a thousand years ago, Europeans basked in warmth that nurtured vineyards in Britain and allowed the Norse to colonize Greenland. At roughly the same time, what is now California was baking in centuries-long droughts, dwarfing the mere seven-year droughts of today. Early South American civilizations literally dried up and blew away," writes William K. Stevens on the [Global Warming Information Page](#).

To recap: Europe went from unusually warm to unusually cold in 750 years or so, and during this time, odd fluctuations in observable signs given by the sun were noticed.

Gary Rottman, a senior research associate at LASP, is privileged to have access to a satellite that measures Total Solar Irradiance (TSI), a measurement process that has been going on since 1978.

"There's no doubt that the sun varies," said Rottman. "But the bulk of the radiation, 99% as we can measure, stays mostly the same."

Measurable variance in the visible spectrum of the sun's output has been no more than 1/10th of one percent since measuring began. Rottman speculated that the sun's visible spectrum output might have dropped as much as 3/10ths of one percent during the Maunder Minimum.

There are periods and cycles to the sun's output. "The sun is a fluid body with nuclear fusion going on inside intense magnetic fields," Rottman explained. Differential rotation -- the fact that the sun's equator spins at a different speed than the orb's poles -- causes magnetic field lines to concentrate and bunch up for 22 years and then release a sustained blast of energy in the form of radiant output, prominences, flares, magnetic bursts and solar wind.

For reasons not quite as well understood, sunspots are also periodic: they reach maximum numbers every 11 years. Every other sunspot cycle coincides with the 22-year magnetic field cycle, resulting in a maximum radiant output period known as a Solar Maximum Year. Colorado set temperature records in the Solar Maximum Year of 1934; in 1956, Colorado recorded the second warmest October on record; 1978 was the first year I ever heard discussions of global warming while attending the University of Kansas; and, of course, 2000 is a Solar Maximum Year, which is the reason the *aurora borealis* has been visible from Colorado this year.

"Where we are now with the sun is very active," Rottman said. "But even that 22-year cycle gets quiet...the Maunder Minimum shows that the sun can go into a quiescent state for 50 to 100 years."

In fact, as recently as February 1899, a cold wave gripped the U.S. that set all-time minimum temperature records in state after state and caused the Mississippi River to dump ice into the Gulf of Mexico, "an event never before witnessed within the memory of man," according to the National Oceanic and Atmospheric Administration.

When the sun is active, it “has more sunspots on it,” Rottman continued.

Sunspots are an area seen as a dark, or cooler, spot on the photosphere of the sun. They are actually concentrations of magnetic flux, typically occurring in bipolar clusters or groups. Surrounding each sunspot is a more active area of enhanced emissions called “faculae” or “plage”. This would explain why the cooler sunspots are associated with periods of increased solar output.

Astrophysicist Sallie Baliunas of the Harvard-Smithsonian Center for Astrophysics briefed Congressional staffers in 1998 on the sun-climate link, citing recent studies that cast doubt on computer models that base their climate change scenarios on changes in greenhouse gas concentrations. During previous warm periods of the Holocene which occurred 1,000 or more years ago, carbon dioxide levels remained flat and could not have been the cause of warming, Baliunas explained. During the last warm period, the one that gave Greenland its name and allowed grapes to grow in Britain, El Nino events were absent, casting doubt on ocean currents as the cause of climatic warming, she said.

“This is straightforward science,” Baliunas defended her findings. “The computer models forecast a warming; the observations do not agree.” But the Maunder Minimum indicates that the sun can cause very rapid changes in climate on earth.

#### **IV. Carbon Sinks, Fossil Fuels and the CO<sup>2</sup> Cycle**

Plants absorb a particular isotope of carbon during the photosynthetic process of converting sunlight, CO<sup>2</sup> and water into simple sugars, releasing oxygen as a beneficial result. When plants die and rot, they release that carbon isotope back into the atmosphere. Comparing the concentration of carbon-12 -- the isotope plants favor -- to carbon-13 provides a ratio which indicates how much CO<sup>2</sup> is being absorbed by plants.

This is important because civilization releases about six billion tons of carbon (in the form of CO<sup>2</sup>) into the atmosphere each year. About half -- three billion tons -- remains in the atmosphere while the other half is absorbed by “carbon sinks” such as the ocean and vegetation. The performance efficiency of these sinks is an important variable affecting how much CO<sup>2</sup> remains in the atmosphere to trap heat and possibly contribute to global warming. Fossil fuel deposits -- coal, oil and natural gas -- constitute another long-term carbon sink that’s being converted into atmospheric carbon dioxide by human activity, but there is no indication of a CO<sup>2</sup> build-up which is beyond the natural limits of the CO<sup>2</sup> cycle. Remember, carbon dioxide concentrations on earth peaked during the dinosaur age and have fallen drastically for natural reasons since then.

Is there a “normal” concentration of CO<sup>2</sup> for the earth’s atmosphere? Curt Suplee, writing for the **Washington Post** in March 1999, investigated this question. “At the beginning of the Holocene, the atmosphere contained about 268 parts per million by volume of carbon dioxide, up from 180 to 200 ppmv in the depths of the last ice age about 18,000 years ago. By the late 1700s, it had risen to 285 ppmv. Since then, the concentration has climbed to 364 ppmv and is still growing.”

Suplee was citing a study conducted by the Scripps Institution of Oceanography and the University of Bern, Switzerland. Scripps-Bern researcher Thomas F. Stocker told Suplee “one commonly referred to the ‘pre-industrial CO<sup>2</sup> concentration of 280 ppmv’” as if it were constant. But following the Scripps-Bern study, “this has to be revised,” Stocker said.

Long before man had achieved industrialization, therefore, CO<sup>2</sup> had varied naturally by as much as 105 ppmv. An upward increase in CO<sup>2</sup> concentrations of only 80 ppmv during the past 200 years cannot, then, be laid squarely on the doorstep of mankind.

“Climate modelers have been ‘cheating’ for so long it’s almost become respectable,” asserted Richard A. Kerr, a writer for ***Science*** magazine. General circulation models, or GCMs, are complex computer programs that attempt to simulate and model the earth’s atmosphere. Thus far, GCMs have failed to reflect global warming realities of 0.3 to 0.6 Centigrade over the past 100 years, have incorporated “flux adjustments” that skew the models by 25 times or more, and have underestimated the ability of clouds to absorb solar radiation while overestimating the increase in greenhouse gas concentrations.

Plants, clouds and oceans interact with the sun in ways that have thus far been impossible to model. Global warming theory assumes that climate changes will force plants to migrate northward toward cooler climates, and that many species will not be able to migrate fast enough to avoid extinction. Recent studies published in journals such as ***Environmental and Experimental Biology***, ***Quaternary Science Reviews*** and ***Quaternary Research*** indicate that rising CO<sup>2</sup> levels have no adverse effects on the photosynthetic processes of plants; in fact, some plants show increased photosynthesis and growth as the atmosphere’s CO<sup>2</sup> content rises.

“Desertification is not our major problem,” commented Micky Glantz, a social scientist with the National Center for Atmospheric Research who has written extensively on global warming. In fact, most concerns about global warming seem to focus on the effects any such climate change would have on the United States in particular. “With any climate change, there would be winners and losers. Russian scientists think it would help them. Today, the U.S. is a winner while Ethiopia, Kuwait and Iraq are losers. Canada might lose a little coastline, but their agriculture would improve. Some islands and the Mediterranean coasts might be flooded.”

Deforestation, however, might be a more significant way that man could be contributing to global warming. Approximately 60% of the world’s rainforests have been chopped down to create agricultural and grazing lands, and that means that millions of trees are gone that would have taken tons of carbon dioxide out of the atmosphere.

Nonetheless, Homo Sapiens is approximately four to six million years old while Industrial Man is only 150 years old. The world’s climate had changed drastically for billions of years before man industrialized, and will continue to do so now that man has industrialized.

## **V. The Kyoto Protocols: A Solution In Search of a Problem**

In December 1997, Al Gore burned 439,500 pounds (or 65,600 gallons) of jet fuel to travel to Kyoto, Japan for the U.N. Global Warming Conference. The result was the Kyoto Treaty and Protocols proposal, which would punish industrialized nations for polluting and reward underdeveloped nations for polluting. Although the Senate has thus far refused to ratify the treaty, Gore has promised to implement its expensive and restrictive provisions whether or not the treaty ever gets ratified.

The Kyoto Protocols would likely triple the cost of gasoline in the U.S. through implementation of heavy taxation. Fuel efficiency standards for automobiles would be increased, causing car prices to increase. Pollution “credits” would be sold by the federal government to American industries which would not be able to maintain today’s production levels, eliminating jobs. These credits could be traded to nations whose



greenhouse gas emissions are already under 1990 levels, such as Russia, “but the trading scheme would cause a massive transfer of wealth to Russia,” wrote Patrice Hill in the **Washington Times**.

“The cost for the United States would be far more than for Europe, Japan and most other nations that may sign the treaty, because it is the biggest energy user. The vast majority of nations – those in the Third World – would not have to cut their energy use and would benefit by attracting businesses hit by high energy costs in the developed world.”

Fifty-eight percent of state climatologists believe global warming “is a largely natural phenomenon,” according to a 1997 survey conducted by the Citizens for a Sound Economy Foundation. Since 1997, the Cooler Heads Coalition, 15,000 scientists and various public policy organizations have been trying to spread the facts about global warming, but the media seem to prefer sensationalism over facts.

“Powerful greenhouse gas a mystery: Scientists say newly found, long-lasting emission rare, but is increasing rapidly.” Sensationalist reporting by news organizations such as the **Denver Post**, which carried the above headline on its front page in July, only contributes to the public’s lack of understanding of climatology, atmospheric physics and the sun. The “new” greenhouse gas referred to by the **Post** was actually discovered in the 1950s and exists in the atmosphere at concentrations of one-tenth of one part per trillion. Yet the article stated that the gas, trifluoromethyl sulfur pentafluoride, “may be warming the global climate” because, under laboratory conditions, it is extremely efficient at trapping heat.

“Bias is widespread in the global warming debate,” wrote NASA Senior Scientist Roy W. Spencer for the Global Warming Information Page. “Scientists are human too, and have their own pet theories, political and world views, and heartfelt beliefs. Nobel Laureates that expound on the threat of global warming typically have no training in the atmospheric sciences.”

Bill Clinton and Al Gore are obviously proud of the current economic expansion (which actually began in 1983 under the Reagan administration and at the beginning of the appointment of Alan Greenspan to chair the Federal Reserve) yet their global warming mitigation strategies would reverse economic growth by as much as 4%. Such a jarring reversal could cause an economic depression, all in the name of a questionable, unproven theory.

Assuming that global warming might be proven to be real within the next 50 to 100 years, there are steps that can be taken to mitigate the effects of climatic change without decimating the economy. In a study entitled “Greenhouse Policy Without Regrets,” Jonathan Adler of the Competitive Enterprise Institute outlines a four-step “no regrets” approach that would improve the economy, contribute to a greener environment and increase job opportunities while preparing the nation for hotter temperatures.

1. Eliminate regulations that inhibit innovation and industrial upgrades. Environmental regulations create barriers and obstacles to researching new energy-saving innovations and installing higher-efficiency production equipment. Businesses are always interested in saving money on energy and increasing efficiency, and would do more to increase energy efficiency if it weren’t so expensive and time-consuming to meet regulatory costs.
2. Eliminate all energy market subsidies. Subsidies encourage pollution and distort energy markets as well as energy-related investment decisions. Al Gore thinks burning oil, natural gas and coal is unnaturally heating the earth, but the federal government pays companies to develop and sell oil, natural gas and coal.

3. Deregulate electricity markets. During the rural electrification efforts of the early 20<sup>th</sup> century, perhaps subsidies sped up the process of making electricity available to remote areas. But now the subsidies merely serve to stifle competition, inhibit innovation and decrease efficiency in the electricity market.
4. Deregulate transportation markets. Jetliners are a significant contributor to greenhouse gas accumulations, yet pilots are forced to fly routes that are not the most fuel efficient and cost effective routes to meet regulatory requirements. Jitneys would reduce the number of cars on the streets, but are illegal. Better road-building techniques and less reliance on traffic control devices would reduce the number of automobiles idling uselessly in traffic.

### **Conclusion: If the Kitchen's Too Hot...**

If the kitchen is too hot, it might be because the sun is streaming in through the windows, because the oven has been left on a little too long, or because the kitchen's on fire. It is illogical to assume that fire is the source of the heat until the other two possibilities have been eliminated through logic and observation. Would you cause water damage to your kitchen by spraying it with a hose just because the sun was shining through the windows?

This is the kind of overreaction displayed by people who want to regulate all aspects of American life simply because they *think* it's getting warmer. After human beings have observed and recorded minutia about earth's climate and the solar system for a thousand years, then we might be able to come to a consensus and conclusion about climate trends on the earth and whether humans are influencing them.

"It's not a problem that's going to be solved in the next hundred years," stated solar researcher Rottman. "I try to be very precise and accurate to make the measurements last 100 to 200 years. I do it so we can get a better understanding of how the sun is affecting climate."

If all the scientists were this objective and if the politicians would leave global warming investigations to the scientists, then global warming theory might not be such an immediate public policy concern. Because objectivity and logic do not always dominate public policy debates, let's leave the question of whether humans are warming the earth to the climatologists, solar physicists, atmospheric researchers and geophysicists for a few decades more. ♦

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### **Endnotes:**

1. Gore, Al. "Earth In The Balance," 1992, p. 29, Houghton Mifflin Company.
  2. Ibid., p. 368.
  3. Galileo, Galilei. "Discoveries and Opinions of Galileo," 1957, p. 91, Doubleday.
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INDEPENDENCE INSTITUTE is a nonprofit, nonpartisan Colorado think tank. Its public policy focuses on economic growth, education reform, local government effectiveness, and constitutional rights.

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