

A RECORD OF SUCCESS

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"Some of these predictions were said to be impossible when you made them. All of them were predicted long before proof that they were correct came to hand. Conversely I do not know of any specific prediction you made that has since been proven to be false. I suspect the merit lies in that you have a good basic background in the natural sciences and you are quite uninhibited by the prejudices and probability taboos which confine the thinking of most of us."

the late H.H. Hess, chairman, geology department, Princeton, and chairman, Space Science Board, National Academy of Science, in a letter to Velikovsky for public record, 1963.

Many scientists and popularizers of science have charged that Velikovsky's successful predictions are no more than coincidence, that they are ad hoc rather than the result of deduction from a consistent, unified set of hypotheses. Yet, it has been the ironic lot of some of these scientists to construct truly ad hoc explanations for the unforeseen discoveries which have confirmed Velikovsky's advance claims. (Velikovsky claimed in 1950, on the basis of a hypothesis concerning Venus, that that planet is far hotter than scientists expected. When Venus, 1000 F temperature was discovered, another scientist put forth the purely ad hoc suggestion that the heat may have been caused by a collision between Venus and a moon.)

"Seldom in the history of science," Ralph Juergens said of Velikovsky's predictions, "have so many diverse anticipations- the natural fallout from a single central idea- been so quickly substantiated by independent investigation." ("Minds in Chaos", American Behavioral Scientist, 7, September, 1963)

Why then, have scientists been so slow to acknowledge Velikovsky's successes in perhaps the most risky of scientific activities: accurate prediction on the basis of a working hypothesis? One wonders whether the pride of specialists might not interfere with their objectivity. As Eric Larrabee remarks about

Velikovsky: "Breaking barriers between disciplines, he arrives at conclusions which no discipline had reached independently. This is the real nature of his challenge, and it is fundamental." ("Scientists in Collision: Was Velikovsky Right?," Harpers, December, 1963) Set forth below is a partial enumeration of Velikovsky's advance claims and their subsequent confirmation by scientific discoveries and investigations. All of these prognostications are inferences drawn from the historical reconstruction offered in *Worlds in Collision*.

This list is not complete, and the literature quoted is usually only a short selection of what has been published. Many of these claims have been directly confirmed, while others have been supported by additional evidence or taken over by other theorists.

The first sentence in each section represent Velikovsky's claims as set forth in the books, published lectures, articles, or memoranda cited. (The numerous confirmations of *Ages in Chaos* are not included in this list.) References to *Worlds in Collision* are based on page numbers in the hardcover edition (Macmillan, 1950; Doubleday, 1950; and the following unchanged, 18 printings by Doubleday). The Forum lecture before the Princeton Graduate College was published as an appendix to *Earth in Upheaval* (Doubleday, 1955). The reader should also see Velikovsky, "Some Additional Examples of Correct Prognosis," *American Behavioral Scientist*, 7 (September, 1963); Velikovsky, "Are the Moon's Scars Only 3000 Years Old?," *New York Times*, early city edition (July 21, 1969); and Bargmann and L. Motz, "On the Recent Discoveries Concerning Jupiter and Venus," *Science*, 138 (December 21, 1962), 1350. A July, 1971, joint publication by the Texas chapter of *Cosmos and Chronos* Campus Study Groups in *Interdisciplinary Synthesis*, titled "Lunar Probes and Velikovsky's Advance Claims," can be obtained from *Cosmos and Chronos*, Physical Sciences Division, P.O. Box 12807, Fort Worth, Texas.

ELECTRO MAGNETISM AND THE SUN

"Space is not a vacuum; and electromagnetism plays a fundamental role in our solar system and the entire universe."

This thesis is no longer controversial since the discovery of Jovian radio noises (1955), terrestrial magnetosphere (1958), interplanetary magnetic field (1960), and solar plasma (1960), followed by the discovery of quasars, pulsars, and black holes. But in 1950 the claim that the universe is not a vacuum but is permeated by electric charges and magnetic fields was greeted as an inadmissible heresy. A correspondence between A. Einstein and Velikovsky (1950-1955) bears witness to this attitude in science. Einstein stressed that the scientific community's violent opposition to Velikovsky centered on this claim. Martin Gardner (*In the Name of Science*, 1952) classified Velikovsky

with flat-earthers for inventing "electromagnetic forces capable of doing precisely what he wants them to do. There is no scientific evidence whatever for the powers of these forces. But so convinced is the hermit scientist that everyone is prejudiced except himself, that he can-with a straight face-belabor the 'orthodox' for refusing to recognize these imaginary energies!,"

"The sun is an electrically charged body."

In the October IS, 1952, Proceedings of the American Philosophical Society, D. Menzel, Harvard astronomer, purported to show that the sun cannot hold a charge above 1800 volts if positive (and, it follows, only a single volt if negative). He asserted that Velikovsky's model requires a charge of 10¹⁹ volts. Eight years later Professor V.A. Bailey of the University of Sydney, Australia, unaware of the discussion concluded that the sun carries a net negative charge on the order of 10¹⁹ volts. Existence of Net Electric Charges on Stars," *Nature*, 186 (May 14, 1960) 508. *Nature*, 189 (January 7 and March 25, 1961), 43-5 and 994-5. It was also found in 1960 that the newly discovered interplanetary magnetic field is centered on the sun and rotates with it.

VENUS

"Venus originated in a violent disruption of Jupiter."

Worlds in Collision, "Pallas Athene," 169-172) For references see C.J. Ransom, "How Stable is the Solar System?" in this issue. (Velikovsky referred to the legendary motifs on this subject in *Worlds in Collision* and promised to elaborate in a sequel to that book dealing with earlier catastrophes. In the meantime, he has discussed the physical implications in "A Rejoinder to Motz," *Yale Scientific Magazine* 41 (April, 1967], 14-16.)

"Venus is hot."

(W in C, "The Thermal Balance of Venus," 371) In 1950 it was known that the cloud surface of Venus is -25°C on both night and day sides. Velikovsky claimed that "Venus gives off heat" and explained why: it was "in a state of candescence" in historical times (W in C, 77) and "must still be hot" (371). In December, 1962' Mariner 11 disclosed that the surface temperature of Venus is 800°F a temperature above that of molten lead, whereas the estimates of astronomers had varied from 45 - 90.F. Jet Propulsion Laboratory, Mariner Mission to Venus (1963), 111. Later probes showed that Venus' ground

temperature is close to 1000.F.

"The Venetic atmosphere contains - besides carbon dioxide - carbohydrates and hydrocarbons."

(W in C, "The Gases of Venus," 368-9, 381) This was confirmed by NASA in February, 1963, and the Jet Propulsion Laboratory (Mariner Mission to Venus, 1963), but was contested by Plummer' Science (March 14, 1969).

"Venus was in near collision with Earth."

(W in C, part one, "Venus", Passim) On April 23, 1966, P. Goldreich and S.J. Peale reported to the American Geophysical Union their startling discovery of Venus' resonant axial rotation: every time Venus passes between the sun and Earth it turns the same face to our planet. T.J. Gordon, formerly chief engineer for the upper stage of the Saturn rocket, wrote: "This type of resonant motion resists outside disturbances. once locked, the motion tends to remain locked. When did the Earth capture Venus, rotation? In Ideas in Conflict (New York, 1966), 37. (Velikovsky himself does not consider this evidence as necessarily supporting his claim of near collision.)

"Venus may have an anomalous rotation."

(W in C, passim) This follows from the claim that Venus became a member of the solar system in a separate event and experienced near collisions with Earth and Mars. The discovery of Venus, retrograde rotation by R. Carpenter and B. Goldstein, of the Goldstone Radar Tracking Station, confirmed this possibility late in 1962. Their find elicited this comment at a meeting of the American Geophysical Union: "Maybe Venus was created apart from the other planets perhaps as a secondary solar explosion, or perhaps in a collision of planets." The National Observer, December, 1962. See also J.A. Van Allen' et al, "Mariner 11: Preliminary Reports on Measurements of Venus," Science, 139 (March 8, 1963), 905~

COMETS AND METEORITES

"A large comet was in collision with Earth."

(W in C, 39-152) There is a layer of white ash covering the oceans. floors that, according to J.L. Worzel and M. Ewing, was deposited in a "cometary collision" - or from a "fiery end of bodies of cosmic origin..." Worzel,

"Extensive Deep Sea Sub-Bottom Reflections Identified as White Ash" Proceedings of the National Academy of Sciences, 45 (March 15, 1959) 349-55; Ewing, "Significance of the Worzel Deep Sea Ash", Proceedings, 355-61. The even distribution and amount of this deposit suggested to Ewing a "cometary collision" of gigantic proportions. See also Urey's claim that Earth collided with a large comet, referred to by Ransom, "How Stable is the Solar System?" in this issue. Cf. Hans Pettersson, "Exploring the Ocean Floor", Scientific American, 183 (August, 1950), 424, as to rich deposits of nickel of meteoric origin in the red clay on the ocean bottoms.

"Many comets are of recent origin (historical times) and are the result of disruptions on planets."

(W in C, p. 201 and elsewhere) See S.K. Vsekhsviaty, "New Works Concerning the Origin of Comets and the Theory of Eruption", Publications of the Kiev Observatory, 5 (1953), 3-57.

"Some cometary tails and also some meteorites contain hydrocarbons"

(W in C' "Naphtha," 53-8) Bobrovnikoff reports spectral analysis has revealed the presence of such compounds in cometary tails. Astrophysics, ed. Hynek (N.Y., 1951), 342. Hydrocarbons in some meteorites "resemble in many ways some of the waxes and petroleum products that are found in the earth." H.H. Nininger, Out of the Sky (N.Y., 1959), 89-90.

"Some meteorites contain argon and neon."

(W in C, "The Atmosphere of Mars," 367) See H. Stauffer' "Cosmogenic Argon and Neon in Stone Meteorites," Journal of Geophysical Research, 66 (May, 1961), 1513-21.

JUPITER

"Jupiter emits radio noises."

(Forum lecture Princeton Graduate College, October 14, 1953) Eighteen months after Velikovsky made this claim, B.F. Burke and K.L. Franklin of the Carnegie Institute announced (on April 5 1955) the chance detection of strong radio signals emanating from Jupiter, supposedly a cold body incased in thousands of miles of ice. In 1960 "V. Radhakrishnah of India and J.A. Roberts of Australia, working at California Institute of Technology, established the

existence of a radiation belt encompassing Jupiter giving 10¹⁴ times as much radio energy as the Van Allen belts around the earth~ V. Bargmann and L. Motz, Science, 138 (December 21 1962), 1350-2.

"Jupiter- a dark star."

(W in C, "The End" 373) Jupiter is now considered a star and the sun-Jupiter system a binary- see G. Kuiper among others. See D. McNally, "Radio Emissions from the Planet Jupiter," Sci Progress 53 (1965) 257-62; P. Peeples' "Are the Interiors of Jupiter and Saturn Hot?" The Origin and Evolution of Atmospheres and Oceans, ed. Branczic and A. Cameron (1964). A.G. Smith "Jupiter, the Radio-Active Planet," American Scientist, 57 (1969), 177-92.

"Part of the ammonia and methane-rich Jovian atmosphere was converted into hydrocarbons by means of electrical discharges when it became Venus' trailing part."

(W in C, "The Gases of Venus" 369) A.T. Wilson apparently followed this suggestion, using electrical discharges in a mixture of ammonia and methane. He succeeded in creating heavy molecules of hydrocarbons. "Synthesis of Macromolecules under Possible Primeval Earth Conditions," Nature, 188 (December 17, 1960), 1007-8.

MARS

"Mars has been subjected to stress, heating and bubbling activity in recent times."

(W in C) "The Planet Mars" 362-5; "The Thermal Balance of Mars," 367-8) In July, 1965, Mariner IV photographs revealed a Martian surface heavily pock-marked by moon-like craters, and this finding was confirmed in greater detail by the current 1972 Mariner IX probe. See also L. Rose, "'Could Mars Have Been an Inner Planet?" in this issue.

"Mars must have localized areas of strong radioactivity (due to interplanetary discharges)"

(W in C, "The Thermal Balance of Mars," ~68. also, Velikovsky, memorandum to the Space Science Board, National Academy of Sciences, March 14, 1967) Hot spots were detected on Mars' surface by Mariner IX (1972) and ascribed to radioactivity.

"Mars must have changed its orbit and its rotational momentum."

(W in C, "The Planet Mars" 363-5) See for references the theoretical and observational support for these claims in L. Rose, "Could Mars Have Been an Inner Planet," in this issue.

THE MOON

"The moon has been subjected to heating (or liquefaction) and bubbling activity in recent times."

(W in C, "The Moon and Its Craters," 360-62. also Velikovsky, "Are the moon's Scars Only 3000 Years Old?" New York Times, early city edition, July 21, 1969) Lunar rocks were found to have undergone heating and bubbling. Tiny glassy spheres constitute a large portion of the soil. They are considered to have resulted from the evaporation of lunar material, which fell back upon condensation. Cf. lunar issue Science (January 13, 1970) with reports of NASA scientists concerning Apollo XI. As to the recentness of the last heating of the lunar surface, see Velikovsky, "When Was the Lunar Surface Last Molten?" in this issue.

"The majority of the lunar craters resulted from the collapse of large bubbles."

(W in C) "The Moon and its Craters" 360-2) In 1955 Percy Wilkins described two score of domes observed by telescope, which he called unburst bubbles. Since then many more such formations have been observed. The two theories about the origin of the lunar craters- volcanic and meteoric- are more recently giving ground to the collapse theory P. Wilkins and P. Moore The Moon (New York; 1955), 42.

"Evidence of petroleum hydrocarbons will be found on the moon."

(Velikovsky, "Are the Moon's Scars Only 3000 Years Old?" op. cit.) Evidence of organic matter (aromatic hydro- carbons) was found in several samples of lunar material returned by the Apollo XI mission. See C. Ponnamparuma' et al., "Search for Organic Compounds in the Lunar Dust from the Sea of Tranquillity," and B. Nagy' et aL, "Organic Compounds in Lunar Samples: Pyrolysis Products, Hydrocarbons, Amino Acids, Science 167 (January 30, 1970), 760-2, 770-3; and P.I Abell, et al., "Indigenous Lunar Methane and Ethane," Nature, 226 (April 18' 1970)' 251-2.

"Hydrocarbons on the lunar surface must have been mostly converted to carbides."

(Velikovsky, "Are the Moon's Scars Only 3000 Years Old?" op. cit.) Carbide rocks were found on the lunar surface. C. Eglington. et al., Nature 226 (April 18, 1970) 251-2.

"Lunar rocks will reveal remanent magnetism, despite the fact that the moon itself has an exceedingly weak magnetic field."

(Velikovsky, memorandum to Space Science Board, National Academy of Sciences, May 19, 1969; or Velikovsky, "Are the Moon's Scars Only 3000 Years Old?" op. cit.) One of the most puzzling finds of Apollo 11 is the magnetic remanence in lunar rocks. See D.W. Strangway et al., "Magnetic Properties of Lunar Samples," R.R. Doell, et al, "Magnetic Studies of Lunar Samples," and S.K. Runcorn, et al., "Magnetic Properties of Lunar Samples," Science, 167 (January 1970), 691-3, 695-7, and 697-9. and P. Dyal, et al., "Apollo XII Magnetometer: Measurement of a Steady Magnetic Field on the Surface of the Moon," Science, 169 (August 21, 1970), 7624. See also Treash, "Remanent Magnetism on the Moon," in this issue.

"Moonquakes must be very numerous (not necessarily strong)."

(Velikovsky, "Are the Moon's Scars Only 3000 Years Old?" op. cit.) On November 20, 1970, NASA reported that equipment left on the moon by Apollo XII records an average of one lunar quake a day, with more severe quakes occurring once a month. "Research Reporter," Chemistry (October, 1971), 17.

"Lunar rocks will be found to contain excessive inclusions of argon and neon from an extraneous source; on the basis of potassium-argon dating the age of the moon will be calculated as older than the solar system itself"

(Velikovsky, statement postmarked July 23 1969-in supplement of New York Times article, op. cit.- mailed to A.W. Burgstahler, professor of chemistry, University of Kansas, Lawrence, Kansas; and Velikovsky, letter to H. Hess, August 7, 1969). Very rich inclusions of argon and neon were found in lunar rocks. Based on potassium-argon dating, some of the rocks gave an unacceptable age of seven billion years. At least two Apollo XII rocks have been dated at 20 billion years. Philadelphia Evening Bulletin. January 6, 1970.) Since smaller particles with proportionally larger surfaces contain more argon and neon, it was deduced that these gases were implanted from the

outside. Funkhausen, et al, "Gas Analysis of Lunar Surface," and D. Heymann, et al., "Inert Gases in Lunar Samples," Science, 167 (January 30, 1970) 561-3, 555-8. R.H. Manka and F.C. Michel "Lunar Atmosphere As a Source of Argon 40 and Other Lunar Surface Elements," Science 169 (July 17' 1970), 278-80.

"Localized spots of excessively strong radio- activity exist on the lunar surface."

(Velikovsky memorandum to the Space Science Board, National Academy of Sciences, "On Radio- activity Hazards on Moon and Mars"; and Velikovsky, New York Times, op. cit.) For NASA information concerning Apollo XV, see New York Times (August 5, 1971): "Some unusually radioactive 'hot spots' were observed." Velikovsky ascribed the origin of localized areas of strong radioactivity to interplanetary discharges. the so-called "rayed craters" he considered to be loci of such discharges. Magnetic anomalies also result from these discharges.

"A strong thermal gradient toward the sur- face, due to disturbance in lunar motion will be found."

("Since the moon was heated and its surface became molten only a few thousand years ago, the temperature gradient under the surface crust will show, to some depth, a mounting curve." Velikovsky' supplement to memorandum of May 9' 1969, to H.H. Hess' Princeton University, July 2, 1969.) Reporting on the Third Lunar Science Conference, Houston, January, 1972' Time magazine (January 24' 1972) referred to the "surprisingly high" gradient-so high that "skeptics suggested...instrument malfunction."

"Thermoluminescence of lunar cores will show a thermal process in historical times."

(Velikovsky' New York Times, op. cit.) The report by R. Walker (Washington University, St. Louis) to NASA on TL tests on shallow cores (about six inches deep) refers to thermal activity about 10,000 years ago. Velikovsky suggested in his article that the cores should be taken from a depth of three feet, where the solar heat of the long lunar day does not penetrate.

THE EARTH

"The Earth has a magnetosphere. It reaches at least as far as the moon."

(Velikovsky memorandum to the United States National Committee for the International Geophysical Year, December 5, 1956) The magnetosphere was discovered in 1958 by Van Allen and was thought not to extend far from the earth. (After this discovery Velikovsky's critics claimed he was still wrong, because he had claimed the magnetosphere reached as far as the moon.) In November, 1964, Ness reported that the magnetosphere on the anti-solar side reaches the moon. In 1965 Mariner IV, on its way toward Mars, detected the Earth's magnetosphere at a distance 13 times the radius of the moon's orbit. In 1971 the Russian Mars 111 probe proved that it reaches 49 times the distance of the moon.

"There have been many sudden reversals in the Earth's magnetic polarity, and they were caused by interplanetary discharges."

(W in C) "The Reversed Polarity of the Earth," 114-15) See S.K. Runcorn, "The Earth's Magnetism" Scientific American, 193 (September, 1955) 152-4; P.M. Blackett, Lectures on Rock Magnetism (Jerusalem, 1956). It was maintained by several authors that the last reversal took place 700,000 years ago. Recently a reversal ca. 12,500 years ago was detected. See, however, the findings of the originators of the method (Velikovsky' Forum lecture, October 14, 1953, contained in Earth in Upheaval, 282-3), who worked on Attic and Etruscan vases and established the last reversal to be in the Eighth Century before the present era. Velikovsky came to identical conclusions in Earth in Upheaval. Subsequently, E. Thellier found two Carthaginian vases of the Eighth Century B.C. that were fired when Tunisia was in the southern magnetic hemisphere. The cause of the reversals is said not to be known.

"There have been shifts in the direction of the Earth's astronomical axis and in the position of the geographical pole.

(W in C, Part 1, Chapter 5; Part ~, Chapter 7.) Upon publication of Worlds in Collision it was stressed by the critics that such shifts are unthinkable. But "Thomas Gold has come to the conclusion that the earth may have rolled over several times during its history: that is, it may have turned over its axis so that points formerly near the geographic poles are now near the equator." "Wandering Poles," Scientific American, 192 (June, 1955), 52. See also "Irregularities in the Earth's Rotation," Sky and Telescope, 17 (April, 1958), 284-6.

"Changes in the length of the day could have been caused in the past by electromagnetic interactions."

(Cf. W in C, 44 386-7; also Velikovsky' "Answer to My Critics" Harpers, June,

1951) A. Danjon, Director of the Paris Observatory' reported to l'Academie des Sciences that after a strong solar flare in 1960 the duration of the day suddenly lengthened by 0.85 millisecond, and that thereafter it began to decrease by 3.7 microseconds every 24 hours. Comptes rendues des seances de l'Academie des Sciences, 250 (February 22 and April II, 1960).

"Some of Earth,s petroleum deposits are of recent date and extratellestial origin.

(W in C, "Naphtha,', 53-58) Radiocarbon analysis of oil off- and on-shore in the Gulf of Mexico has revealed that it was deposited during the last 9000 years not millions of years ago. P.V. Smith, "The Occurrence of Hydrocarbons in Recent Sediments from the Gulf of Mexico" Science, 116 (October 24, 1952), 437-9. Ten years later A.T. Wilson claimed an extraterrestrial origin for a11 the Earth's oil. "Origin of Petroleum and the Composition of the Lunar Maria," Nature, 196 (October6, 1962), 11-13; J. Oro and J. Han describe how petroleum can be formed through the interaction of comets and planets. "High-Temperature Synthesis of Aromatic Hydrocarbons and Methane," Science, 153 (September 16, 1966), 1393-5.

"The Earth's climate has undergone radical change as recently as the Bronze Age. Human settlements will be discovered on the Kolyma or Lena Rivers flowing into the Arctic Ocean."

(Worlds in Collision, 329) A. P. Okladnikov ("Po Sledam Drevnikh Kultur,, ["Vestiges of Ancient Culture,'] 1951) discovered settlements on the Kolyma River'and Bronze civilization in the Yakutsk region. The ground sur- rounding the Kolyma habitations is now permanently &ozen.

"The last (Wisconsin) glacial period ended not 35'000 years ago but much later, and a more recent glacial advance occurred 3,400 years ago."

The first claim was confirmed- Johnson in W.E. Libby, Radiocarbon Dating (Chicago, 1952), 105. The second claim was also confirmed. H. Seuss, "U.S. Geological Survey Radiocarbon Dates 1," Science, 120 (Sep- tember 24, 1954), 467-73; and M. Rubin and Suess, "U.S. Geological Survey Radiocarbon Dates 11." Science, 121 (April 8, 1955), 481-8.

ANCIENT HISTORY

"Entire civilizations were overthrown by violent catastrophes in the Near

East during historical times."

("Theses for the Reconstruction of Ancient History," 1946) In a highly detailed and technical study analyzing the archaeological evidence from practically every excavation from Troy and the Aegean and Egypt to the Caucasus and Persia and India, Claude Schaeffer concludes: "Our inquiry has demonstrated that these repeated crises [i.e., the violent destruction of ancient cities] ...were not caused by the action of man. Far from it, because compared with the vastness of these allembicing crises and their profound effects, the exploits of conquerors...would appear only insignificant." One of the greatest upheavals, according to Schaeffer, brought an end to the Middle Kingdom of Egypt and to Middle Bronze civilization in general. *Stratigraphie comparee et chronologie de l'Asie Occidentale* (London, 1948).

"The Minoan B script writings unearthed on Crete and in the Peloponnesus are Greek.

(Forum lecture, Princeton Graduate College, October 14, 1953) In November, 1953, Michael Ventris made his initial decipherment of Linear B known. Fifty of the world's most noted Hellenist scholars previously canvassed by Ventris replied unanimously that they did not expect the script to be Greek, nor did Ventris himself. But Ventris proved this script to be an ancient form of the Greek language. See J. Chadwick, *The Decipherment of Linear B* (New York, 1958), esp. 67-100.

"Mesoamerican culture is several centuries older than the date assigned to it in traditional historical chronology."

G. Kubler wrote: "The Mesoamerican cosmology to which Velikovsky repeatedly appeals for proof did not originate until about the beginning of our era." *American Journal of Science*, 248 (1950). "In December' 1956, the National Geographic Society announced: "Atomic science has proved the ancient civilizations of Mexico to be some 1'000 years older than had been believed" Juergens, "Minds in Chaos," *The Velikovsky Affair*, ed. de Grazia, 28 . P. Drucker' et aL "Radiocarbon Dates from La Venta, Tabasco " *Science*, 126 (July 12, 1957), 72-3; and Richard S. MacNeish, "The Origins of New World Civilization," *Scientific American*, 211 (November, 1964), 29-37.

Following is an undocumented list of additional claims, most of which have subsequently been confirmed or cupported by scientific data. A few of the items, still unconfirmed, stand as further experimental tests. The interested reader can check confirmations by consulting Velikovsky's writings and the

scientific literature.

The behavior of comet tails near the sun is due, not to light pressure, but to their electrical charges.

Ice (water) is present in cometary spectra.

Ammonia and methane are present in cometary spectra.

Comets can attain a mass on the order of planetary masses.

MERCURY

The precession of Mercury is not a relativistic phenomenon, but results from that planet's electrical charge and its motion in the sun's magnetic

Mercury has occupied its current orbit only since recent times.

Mercury possesses excess heat (more than it receives from the sun) owing to planetary contacts in the past. This results in its night side being unexpectedly warm.

Mercury has an atmosphere of hydrogen.

VENUS

Petroleum fires burn at the terminator and on the night side of Venus, resulting in a higher temperature on the night side than on the day side.

The emission spectrum on Venus, night side is due, not to lightnings, but to the planet's heat.

The swifter rotation of Venus' higher atmosphere results from absorption of the momentum of the cometary tail the planet once possessed.

Venus possesses a massive atmosphere (more than 100 terrestrial atmospheric pressures).

Oxygen is present in Venus' lower atmosphere and hydrogen and carbon are present in the higher atmosphere- a result of petroleum fires.

MARS

Mars, having suffered planetary contacts, has a moon-like surface.

The Martian surface exhibits cracks and fissures. Some of the Martian craters resulted from interplanetary discharges.

The Martian polar caps are carbonaceous.

Mars gives off more heat than it receives.

Mars's atmosphere possesses argon and neon, but no nitrogen.

Earth's argon and neon is partly of extra-terrestrial origin.

Pathogenic microorganisms live on Mars.

MOON

Traces of water exist on the moon

Iron, sulfur, and molecular oxygen (bound in the lunar rocks) exist on the moon.

JUPITER

Jupiter is an electrically charged planet.

Jupiter possesses sulfur, iron and gold

Jupiter's red spot is a tornado (Taylor column) over a hole which was the place of Venus' birth.

Jupiter's core has a high temperature.

Jupiter possesses organic molecules.

Jupiter's electrical charge explains why its equator rotates more swiftly than the rest of the planet.

SATURN

Saturn contains (or consists of) water.

Saturn possesses molecular chlorine.

Saturn emits X-rays and/or cosmic rays.

The Saturnian rings consist of ice.

The Saturnian rings rotate more swiftly than the planet

PLUTO

Pluto's mass is insufficient to produce the observed perturbations in Neptune's and Uranus' orbits.

Pluto is highly charged

EARTH

Sudden changes in ocean levels have occurred including one change 3500 years ago.

Cause of pluvial crises and ice formation was the evaporation of oceans.

The salt in the oceans originated extra-terrestrially.

The area covered by the oceans increased after the Deluge.

Tektites (australites) have lain on the ground only 3000-6000 years.

Three great rifts circling the globe resulted from cosmic forces.

Coal originated from fires and tides on a global scale

Reversal of Earth's magnetic poles, widespread volcanic activity, and extinction of species occurred simultaneously in the past.

In the spring of 1971 the radiocarbon laboratory of the British Museum, London, performed radiocarbon tests on palm kernels and reeds from Tutankhamen's tomb. The tests dated the samples at 899 before the present era. Velikovsky, in a letter (March 2, 1964) to Dr. Elizabeth K. Ralph of the University of Pennsylvania radiocarbon laboratory, suggested that seeds and short-living plants- reed, papyrus- from Tutankhamen's tomb should be subjected to radiocarbon testing. He stated that he expected the result to be

ca. 840 B.C. The accepted date for the death and entombment of Tutankhamen is 1350 B.C. The tomb was not opened until the early 1920's, when it was discovered by Carter.

////90 MINUTE VIDEO DOCUMENTARY\\

Kronia communications has completed a 90 minute video documentary on "Saturn Myth" author Dave Talbot's startling discoveries about destructive perturbations in the planetary arrangement of the solar system. "Remembering the End of the World" give a clear insight into the very different world that ancient peoples inhabited and told about in their myths and art. The video is profusely illustrated with computer animation and a beautiful gallery of archaeological photos and ancient art.

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//// CONTEMPORARY VELIKOVSKIAN SCHOLARSHIP \\

On Nov. 26, 1994, Portland, Oregon hosted an international symposium on ancient myth and modern astronomy dedicated to the pioneering work of Immanuel Velikovsky, author of "Worlds In Collision". Over 20 researchers spoke on the need for a reinterpretation of the archaeological, astronomical, geological and anthropological records in light of growing evidence that The Earth's recent history witnessed catastrophic encounters with a number of planetary and comet-like bodies. Kronia Communications is making the proceedings of that symposium available both on audio cassette and as ASCII text 3 1/2" diskettes. We also have a collection of representative text files from the pages of historic and ongoing Velikovskian journals including Pensee, Kronos, The Velikovskian, AEON, SIS Review and Catastrophe & Ancient History. A partial list of the contributors and their bios is below. Prices are as follows:

20 Cassette set of audio tapes from the International Symposium:
"VELIKOVSKY- ANCIENT MYTH AND MODERN ASTRONOMY" \$60.00

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AEON is a journal of science devoted to the collection and exploration of archaeo-astronomical traditions and analysis of common patterns in ancient myths from around the world. Topics include:

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VICTOR CLUBE- Dean of the astrophysics department at Oxford University, England. Co-author of two books, "Cosmic Serpent" and "Cosmic Winter", claiming that major cometary disasters have occurred within historic times, devastating early civilizations. His current work is aimed at alerting government agencies to such perils as comet Shoemaker/Levy and encouraging governments to mobilize the technologies necessary to identify potential cometary intruders and to provide terrestrial defenses against them.

EV COCHRANE- Associate Editor Kronos; executive editor and publisher AEON; published many articles in Kronos and AEON from comparative mythology, to planet/comet catastrophism and biological evolution; currently finishing major work: "The Many Faces of Venus".

VINE DELORIA- An American Indian activist, lawyer, historian, educator author screen writer and consultant. He is author of "Custer Died For Your Sins", "God Is Red", "Indians of The Pacific Northwest", "The Nations Within", and 10 other books on native peoples issues. He has served on the editorial boards of the American Historical Society, the National Geographic Society, the American Heritage Dictionary of the English Language, the Journal of International and Comparative Law, and over 15 other publications. He has over 5 honorary degrees, has authored 8 special government reports on Indian affairs., and has over 100 periodical articles including articles in Pensee and Kronos.

ROBERT DRISCOLL- Graduated Caltech (physics) and Case Tech (mechanical engineering) (cum laude); author "Unified Theory of Ether, Field and Matter", 1964; member American Physical Society and his articles on physics have appeared in The Bulletin of the American Physical Society, Hadronic Journal, Physics Essays, AEON, author of numerous journal articles.

CHARLES GINENTHAL- Editor-in-Chief, The Velikovskian;; contributor to Kronos, AEON, Meta Research Bulletin; author: "Carl Sagan and Immanuel Velikovsky" and "The Continuing Velikovsky Affair: The Second Generation". Charles is also working on a cosmology invoking electromagnetism as a counterforce to gravity in interplanetary and interstellar space.

ROBERT GRUBAUGH- Structural Dynamicist 1967-1990 at TRW Ballistic Missiles Division, San Bernardino CA, Section Chief, Department Manager, Senior Staff Engineer- Analyzed trajectories in relation to stipulated orbital conditions; inventor of a rotational shock measuring device, now being used by the Japanese for earthquake measuring.

RICHARD HEINBERG- Velikovsky's personal assistant and editor of his unpublished manuscripts. Heinberg's popular book, "Memories & Visions of Paradise" was hailed by Jean Houston (noted authority on the great religions) as "...a new classic in the study of the world's psyche." He is also the author of two other books and numerous articles on mythology, anthropology, and ecology.

GUNNAR HEINSOHN- Masters Sociology 1971, Doctorate Social Sciences 1973, Doctorate Economics 1982, Freie Universitat, Berlin; tenured Professor,

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EARL MILTON- BS 1956, MS inorganic chemistry 1958, doctorate gas phase spectroscopy University of Lethbridge, Montreal; staff University of Saskatchewan, photometrics of the aurora borealis; founding faculty member and head Centennial University at Lethbridge where he engaged in laboratory research on the aurora and stellar spectra and developed an all-electric theory governing cosmic and terrestrial events; currently completing manuscripts on astro-catastrophism including collaboration on an Encyclopedia of Quantavolution and Catastrophes; editor of "Recollections of a Fallen Sky, Velikovsky and Cultural Amnesia" and co-author of "Solaria Binaria: Origins and History of the Solar System"

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DONALD PATTEN- B.A. and M.A. degrees in geography from the University of Washington. Author of The Biblical Flood and the Ice Epoch (1966), The Long Day of Joshua and Six Other Catastrophes (1973), and Catastrophism and the Old Testament (1987). He is also a principal in the production of two videos, "Cataclysm From Space 2800 B.C." and "The Discovery of Noah's Ark."

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DAVID TALBOTT- Founder and publisher of Pensee magazine's ten-issue series, "Immanuel Velikovsky Reconsidered," which helped to spark international interest in Velikovsky's work in the mid seventies.

Author of "The Saturn Myth" (Doubleday, 1980), and founder of the journal AEON: A Symposium on Myth and Science.

WALLACE THORNHILL- computer systems engineer with IBM and the Australian Government; postgraduate Astrophysics studies at Queen Mary College, University of London; papers on Venus and the origin of chondritic meteorites have been published in the UK Society for Interdisciplinary Studies (SIS) Review and the Proceedings of the National Australian Convention of Amateur Astronomers; Past committee member of SIS.

ROGER W. WESCOTT- B.A. Princeton, (linguistics, summa cum laude); Ph.D. Princeton, linguistics 1948; Rhodes Scholar; anthropological field work in Nigeria; director African Language Program, Michigan State University.; Author of over 40 books and 400 articles; listed in Who's Who; Professor of Linguistics in the Humanities Division of the Graduate School and Professor of Anthropology in the Social Science Division of the College of Liberal Arts at Drew University in Madison, New Jersey; first holder of The Endowed Chair of Excellence in Humanities at the University of Tennessee.; current President of the International Society for the Comparative Study of Civilizations.

SAMUEL WINDSOR- Windsor is a mechanical engineer previously employed by Boeing and by the Department of the Navy in building nuclear submarines. Currently working as a naval architect and marine engineer. His essays have appeared in the journals Catastrophism and Ancient History and AEON.

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IRVING WOLFE- B.A. English and Philosophy 1956, M.A. English 1958, doctorate Drama 1970 McGill University, Montreal; Professor of Drama, McGill University 1978 to present; author of over 25 articles and 50 papers on Velikovsky and the role of global catastrophe in the shaping of ancient and contemporary dramatic themes, in the formation of cultural amnesia, in the creation of world religions and other forms of

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ERIC MILLER- Poet, playwright, writer; former Trustee of Island Campus (Pacific Institute for Advanced Studies); correspondent with and performed research for I. Velikovsky; author of "Passion for Murder: The Homicidal Deeds of Dr. Sigmund Freud" (1985 New Directions), "Venus Worship In Ancient China" (manuscript), "The Errors of Einstein" (manuscript).

CHARLES RASPIL- B.A. Political Science. 1967, City College of NY; currently working as a Fair Hearing representative for the City of New York; published in Horus, The Velikovskian, Proceedings of the International Forum on New Science.