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GRAVITATIONAL - RIP-OFF SPECULATION, THEORY, ... OR FACT ?

BY

ALLAN O. KELLY

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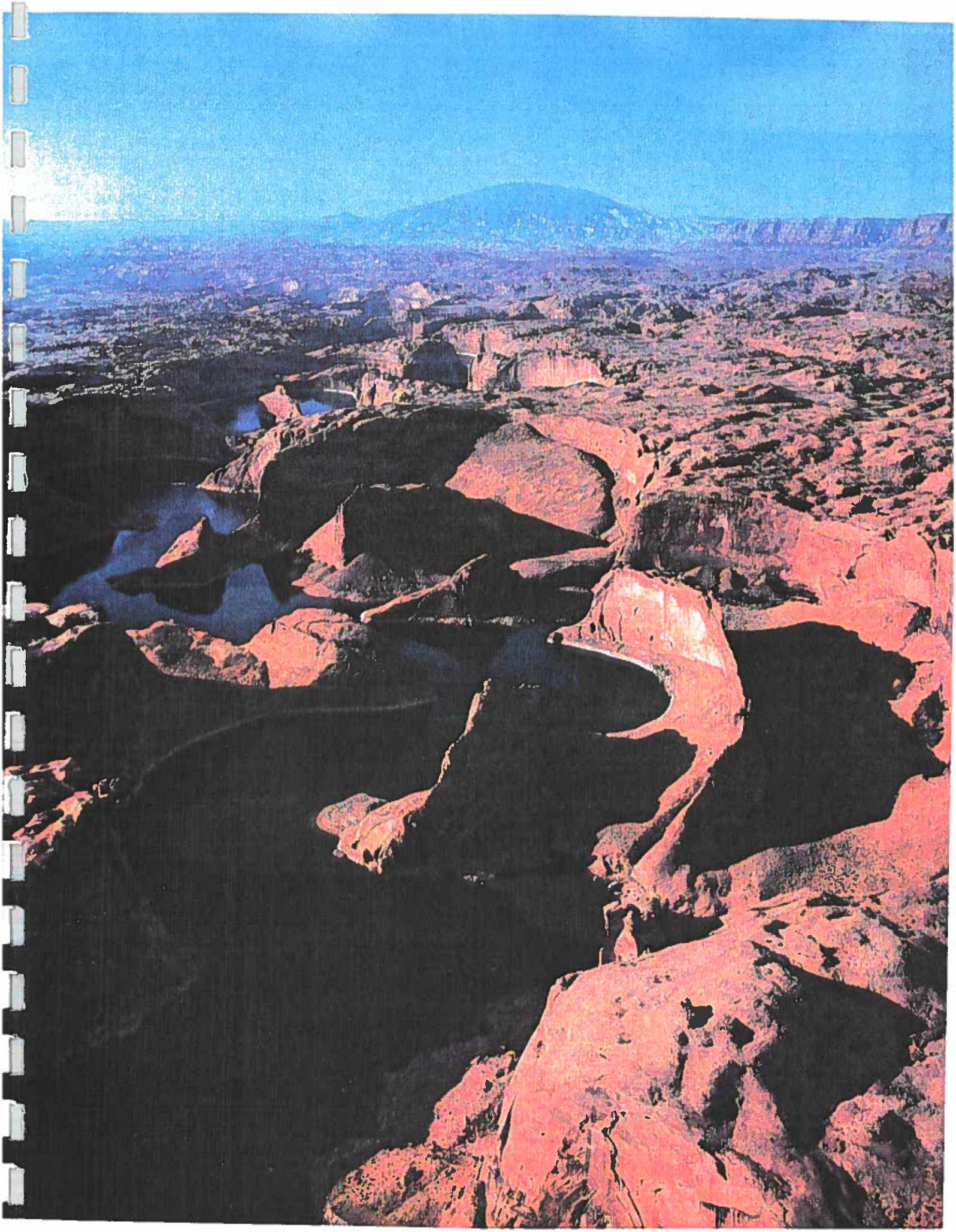

THE GRAVITATIONAL DISRUPTION OF PLANETARY SURFACES

BY

ALLAN O. KELLY

1973-1976

PREFACE

By way of introduction, and to warn the reader about the far-out nature of what is to follow:

Suppose that a close-approaching cosmic body of planetary size were to raise a huge mound of water as it crossed the Pacific Ocean on a course parallel to the equator and traveling in the same direction as the earth in it's orbit and the earth's rotational direction. If it were of a size and at a distance such as the one that produced the great canyon on Mars known as Corporates, it could have carried away into space a strip of ocean water 250 miles wide and 4 miles deep, allowing the water on either side to rush back to fill the space thus removed. When these two walls of water met they must have produced a wave 50 miles high and a following coming and going, tidal action, that would have lasted for weeks or months before gravity rested from its labor.

Other such scenarios could be dreamed up by the dozen, and have been, no doubt, since the stone age, but modern man (professional scientists) have not dared to brave the wrath of their peers or be made the laughing stock of the earth-science world. After all, it is a matter of bread and butter, their jobs. This leaves the field open to the well-read and well-fixed laymen who have the time and the inclination to travel the world and observe for themselves the anomalies of Nature, for observation is the basic tool of science.

The great savants of ancient time were few in number because of the fear of death and torture for questioning the dogma of the day. Prison was a certainty and death not a painless ending as it is today in most civilized countries.

In recent years the theory of Impact as a universal fact has become widely accepted, but the possibilities of gravitational disruption has hardly been considered at all. Gravity as the major and final force in the Universe is only in the news media as a "Star Wars" fantasy, and no

professional geologist or astronomer would think to look for, or even think about, looking for the physical evidence as offered here, a

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natural thought that would certainly come to early man because of his observation ability. He saw the mother/father creation all around him and in the plant and animal world. Man is the only animal that has this ability to observe, think about past experience and reason about the future. This is common knowledge but given very little consideration in our universities because asking "WHY" is not encouraged, the facts are already known.

Dr. Halton Arp, well known and outstanding scientist, ends his recent book "Quasars, Redshifts and Controversies" with this statement, "The most important thing for us to recall may be that the crucial quality of science is to encourage, not discourage, the testing of assumptions."

The papers that follow on gravitational disruption are based upon good PRATICAL science, some assumptions and very close observation of the physical facts.

OBSERVATIONS OF POSSIBLE GRAVITATIONAL FISSIONS IN WESTERN AMERICA, MEXICO AND THE SEA OF CORTEZ

December 30, 1976

Allan O. Kelly

My main purpose in taking this island-hopping trip down the Sea of Cortez with the University of California Extension Service was to study the islands in the sea and the shore of the peninsula, not from my usual Impact point of view, but to look for possible evidence of gravitational fission and crustal disruption. I had not expected to find any evidence of major impact craters, for I had flown over the peninsula several times and studied high altitude photographs of the area so that I was quite certain that impact was not the answer to the origin of the sea of the peninsula of Baja California. Also, I was well acquainted with the widely accepted theory that the peninsula and the upper California area west of the San Andreas Fault was part of a continental plate split off from the North American Plate and was still moving along that plate to the northwest. What interested me more was the possibility that gravitational disruption had been the moving force; that this was part of Arizona, and all of the Great Basin up to the Canadian Boundary. This theory had occupied my mind since studying the photographic evidence that had been returned by the Mariner 9 probes of Mars.

The possibility of gravitational disruption as a dynamic force in Earth history first came to me in 1973 following the Mariner 9 probes. I saw the difficulties of trying to explain the giant canyon, Corporates, or the huge volcano, Olympus Mons. These features are at least ten times greater than any features of similar kind on Earth. The volcano is 15 miles high and 300 miles across with a mighty escarpment around its periphery over 2 miles high. The Canyon, Corporates, was variously reported in the news media as measuring 2,000 miles long, 150 miles wide and from

5 to 15 miles deep. "Another enigma wrapped in an anomaly".

When the first good maps of Mars became available, it was seen that these gigantic features were only a part of the features in a pathway angling across the equator of Mars for a distance of over 7,500 miles (more than half way around the circumference of Mars) with an average width of about 2,000 miles. The remainder of the Martian surface, excepting the polar caps, was covered as completely as the Moon with impact craters and no volcanic craters to be seen anywhere excepting those in the pathway (featureless plain). The pathway itself was almost devoid of impact craters except for a scattered few small and recent ones. Along the edge of this pathway was a border of half crater rims similar to those seen on the edges of the great crater seas on the Moon.

What was the origin of this 7,500 miles pathway, these outsized volcanoes, this huge canyon? What force within or on the surface of Mars could have gouged out this canyon and removed from sight some two to three million cubic miles of rock and right next in line build a volcano 15 miles high? It came to me then that only some super-gigantic force like gravitational force coming from a body much larger than Mars and probably moving nearly parallel to the Martian orbit around the Sun could have ripped off this canyon crust and carried it away into space and/or could have sucked up lava from the interior of Mars to form the huge volcanoes. Or, could have erased the old impact craters that had once covered this surface of Mars. It certainly was not erosion or volcanism as we know it here on Earth.

Then I wrote a paper called <u>"THE GRAVITATIONAL DISRUPTION OF THE PLANETS EARTH AND MARS: A SPECULATION</u> in May of 1973. Then in December of 1976, following the Viking I and II probes, I wrote another paper based on new and better information. This 1976 paper was called "<u>THE GRAVITATIONAL DISRUPTION OF MARS: SPECULATION - THEORY OR FACT?</u>" Neither of these papers was offered for publication

because a similar one which I had written in 1974, "INTRODUCTION TO IMPACT AND GRAVITATIONAL DISRUPTIVE THEORY", was turned down by both geological and astronomical publications. I decided the time was not ripe.

Then in March and April of 1976 I made a trip to Kitt Peak in Arizona and other trips to eastern California, Nevada and Idaho. It was on the trip to Kitt Peak that I began to see that the anomalies that could not be explained by orthodox geology, impact geology or plate tectonics. I had suspected Kitt Peak of being a central rebound peak from a a very ancient impact whose crater rim had been largely eroded away. I began to see that there was no reasonable explanation for all of the lava plains and mountain ridges scattered across southwestern Arizona, down into Mexico, up through Nevada, Oregon, Washington and Idaho to the Canadian border. How could all of this vast area of volcanics with its parallel ranges of mountains have come into begin without volcanoes? Here is an area of approximately 600,000 square miles that is predominately lava and metamorphic rocks with only small remnants of sedimentary rocks and scattered granite outcroppings like Kitt Peak. There are many small cinder cones and lava flows along the margins of this vast area including the Columbia Plateau (called "Scablands") that covers an area of nearly 10, 000 square miles of flat beds or flows that resemble the huge lake-like impact scars on the moon called the "Maria". These flat-lying beds of lava have no relation to the row of true volcanoes that range north from Mt. Shasta to the Canadian border. Where did all of this lava come from? Could there have been a gravitational encounter far back in the Earth's history when the crust was stripped off down to the Moho layer where the tensile strength of the rocks was diminished by heat to the point of giving way to the gravitational pull, or what? Did this moving gravitational pull string out the mountain ranges of the Great Basin in their north and south direction and on down into Mexico?

The above questions, and more, I considered in a paper entitled, "LOG OF A TRIP TO KITT PEAK". I finished this paper on March 23, 1976 and sent copies to Dr. H.H. Nininger and his son-in-law, Glenn Huss who is the Director of the American Meteorite Laboratory in Denver, Colorado. Both of these gentlemen accompanied me on this trip to Kitt Peak.

In October of 1976, I added another five pages to the March 1976 paper pointing out that Kitt Peak was a giant cone-on-cone structure of granite surrounded by level lava plains and, referring to a paper I wrote in January of 1972, "THE GIANT CONE STRUCTURES OF THE SIERRA NEVADA", I proposed that these giant cone structures are the result of a massive impact and that three is no orthodox geological explanation for them. Also, this vast area of possible gravitation fission, which I had called "The Mexican-American Massive", was bounded on either side by upturned blocks of crust. The mountains on the west side from the Canadian border to tip of Baja California were tilted up toward the east. On the other side of this long strip, the sedimentary rocks of the Colorado Plateau are tilted up toward the west, not ~~has~~ uniform or as regular as those on the west side, but strongly marked by the tilt of the Hurricane Fault as seen in southwestern Utah and on down into Arizona. Aerial photos show remnant blocks of the Colorado Plateau just west of the Hurricane Fault that have slumped down well over 1,000 feet. Orthodox geology sees these blocks as good evidence of down faulting or slumping, but they do not offer a reasonable explanation either for the blocks or the whole basin. How could the crust of the Earth have opened up and the two sides moved away from each other for an average distance of 400 miles, and with an average slump of only about one mile? Time is not the answer. The evidence ignores erosion and sedimentation.

It is evidence that the crust of the Earth is under compression due to gravity from the fact that earthquakes are the product of strong lateral pressures that cause one

side of a major fault to move against the other in sudden jerks. Earthquakes of whatever size do not cause the plates to separate and to move apart for more than a second or two. Man has never seen the earth open up with long strips falling in to form Grabens like the Owens Valley of California and there is no evidence that this could happen in any length of time. Gravitation is too great. Everything indicates that the crust of the Earth is under strong compression, otherwise there would be much bumping and jostling about among the plates with endless earthquakes.

The evidence indicates that the Earth is in near perfect equilibrium and gravitation and rotational forces together with the forces of erosion, sedimentation and isostasy are all continually working to bring the Earth into a more perfect balance. It appears that only extra terrestrial forces of cosmic collision and gravitational fission can alter this movement toward a more perfect sphere. However, perhaps the radio-active elements within the Earth can alter these balancing forces to some small degree.

It was with these ideas and speculations in mind that I wanted to take the island hopping trip down the Sea of Cortez, so with long preamble on WHY, let me recount what I saw.

The whole peninsula of Baja California and the Sea of Cortez fit the picture drawn above. Excepting that part below La Paz, the whole peninsula is tilted up toward the east so that the east coast presents an escarpment varying from about 1,000 feet in the south to almost 10,000 feet in the north, the whole area sloping westward to the Pacific Ocean. The northern part of the peninsula is quite mountainous from coast to coast, being part of the granite batholith extending south from upper California and roughly 200 miles in length. The middle part of the peninsula from San Pedro Martier south to La Paz is all volcanic as the

orthodox geologist might describe it. I think that a better description is as a lava breccia formation since true volcanoes are absent. How all this mass of cobblestones and water worn rocks entered into this "peanut brittle" kind of formation is a riddle. This area is two hundred miles long and forty miles wide and sloping from sea level on the west to 1,500 to 3,000 feet along the Sea of Cortez. Was this once molten sea floor somehow strewn with cobbles and rocks? This lava breccia section has many canyons, all draining into the ocean to the west while the east escarpment is so steep that it reminds one of the Grand Canyon when looking up from the bottom.

The south end of the peninsula, the last 125 miles, is a red granite formation of low hills and mountains that have no apparent relation to the lava breccia area and with no particular tilt in any direction. The highest peaks on the west side are probably less than 1,000 feet high.

The Plate Tectonic Theory proposes that Baja California has split away from the mainland of Mexico and is drifting westward as well as northwest along the San Andreas Fault. If so, why is it tilted toward the west? Why did it not slide on the level? Does it slide in two directions at once? Did it slide at all? It should take a lot more force to raise the east side and force the west side into the earth. This fact can be soon tested. Take a brick and slide it over the ground. Then tilt it and try to push the brick into the ground. Some force had to lift the east side of the peninsula or dig out under the west side so it could sink. It is as simple as that. If the peninsula has moved westward, why did it not produce a mountain range on that side, bulldozing them up like the Andes?

Plate Tectonic Theory often make simple statements without going into detail as to how these things happen. We need to reason out the simple mechanics-the natural laws that govern.

We know that the crust of the Earth moves, but how? If

pressed, the advocates of Plate Tectonics offer a two word answer: Sea floor spreading. If pressed more, we get two more words: Convection currents, a movement of magma in the mantle. If pressed even further for more detail, we learn that radioactive elements deep within the crust have arranged themselves in long, narrow lines where the plates are joined together. Why? Well, new facts start as speculation and we must have faith. Now faith, we know, moves mountains and so why not continents? But how, one may ask, can any or all of the plates move if packed together so tightly? Where is the vacant space into which some plate may drift?

Suppose, for analogy, we have a pond frozen over with thick ice and suppose we crack that ice into several plates by some method. Will the plates of ice drift? The answer is no, but if we remove one plate, then the rest may move about if unstuck from the banks of the pond.

The continents move we know, but the advocates of Plate Tectonics have never figured out how to remove one plate. Could gravitational fission have ripped off the crust and relieved the compression?

Suppose we apply the gravitational disruption theory to the Sea of Cortez and the Baja Peninsula as part of the Mexican-American Massive described earlier. We would first assume that an object many times the size of the Earth passed by the Earth at a distance sufficiently close to raise a circular mound of crust some 500 miles across or about the extreme width of the Great Basin.

To apply the gravitational disruption theory to the Sea of Cortez and the Baja Peninsula as part of the Mexican-American Massive described earlier, let us suppose an object many times the size of the Earth passed by the Earth at a distance sufficient for the mutual attraction of gravity to raise a circular mound of crust some 500 miles across or about the extreme width of the Great Basin. Let us also suppose that this body pulled away the center of this mound

as the Earth turned on its axis under the focus of attraction about 400 miles wide and that this central part was pulled away into space and the 50 mile strips on either side broken up and tilted upward. The center then would have been broken up and shaken as if by a giant earthquake and as the gravity focal point passed, the mountain sized blocks were let down with all of the lesser debris and the whole wedging together and tilting in various directions. This is what one often sees in traveling across the Great Basin or down the Sea of Cortez among the islands. The high escarpment that forms the eastern side of the peninsula has been lifted and broken up into elongated sections that have slid down into the Sea of Cortez, some tipping north and some south and some having slid out into the Sea to form the islands. Isla Angel de LaGuardia, for example, is a long narrow island with deep canyons coming out of a high ridge that reaches elevations of over 3,000 feet. It lies about 10 miles off shore in deep water and in cruising along the eastern shore close in to the cliffs, we saw only a few small beaches at the mouth of canyons. We dropped anchor off one of these and our tour guide took a party on a hike up the canyon to show us the elephant trees that grow there. A herd of sea lions were out on this little beach basking in the sun. A few barked displeasure at our intrusion, but the pups swam out to greet us.

The eastern shore of the Sea of Cortez is quite flat for many miles inland and very different from the high escarpment along the other shore. This might indicate that the proposed gravitational rip-off not only tore out the Sea of Cortez, but tilted the peninsula and pushed it to the west. The rock material coming out of the Sea was carried away into space. It would seem logical that any force sufficient to break loose the crust of the Earth would have the power to carry some of it away into space against the pull of the Earth's gravity.

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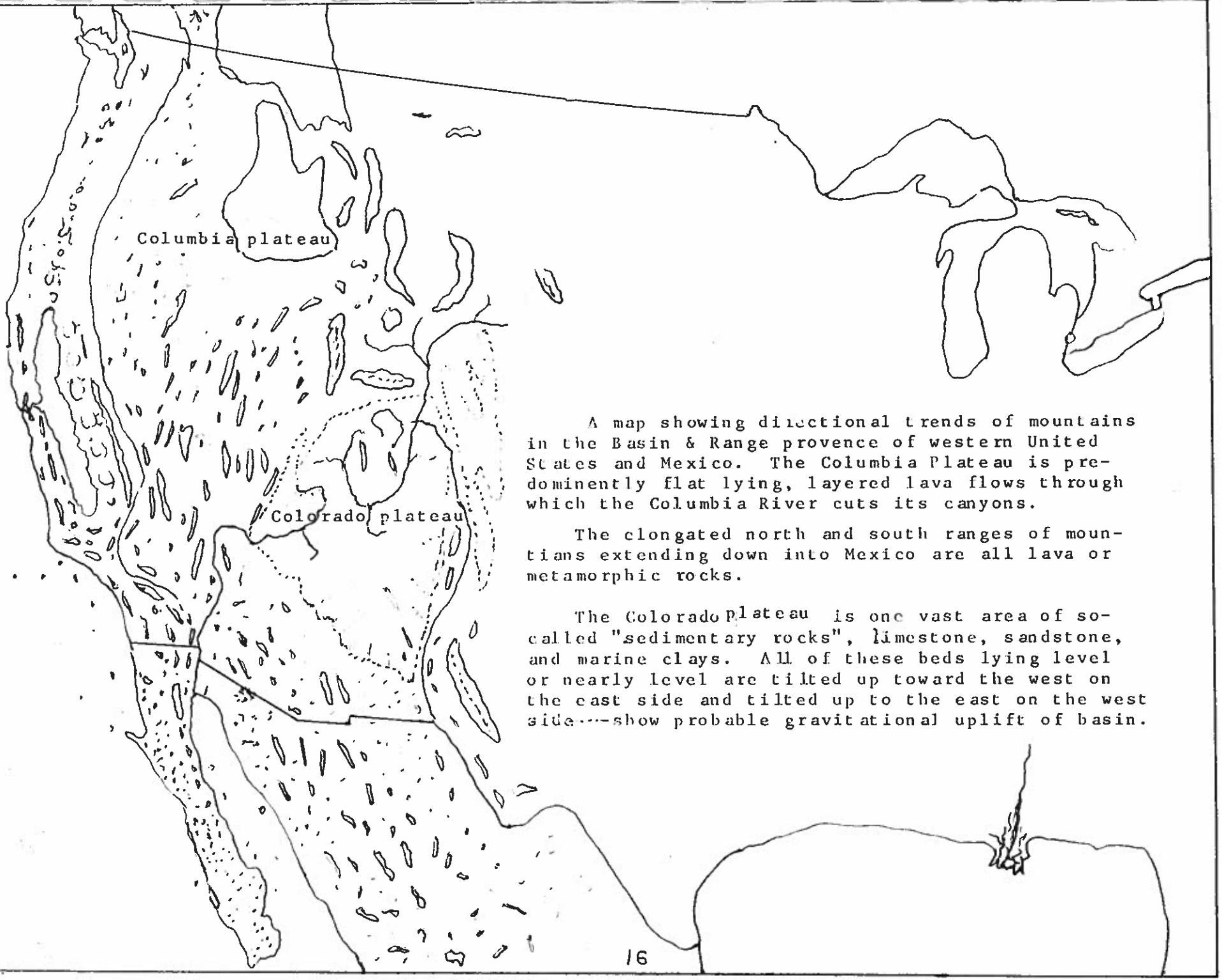
The long history of the Earth may be better explained by a series of gravitational rip-offs than by current methods. The deep oceans may have had their origins in such gravitational encounters and this may be one of the reasons that there is so little evidence of large impact craters on the Earth. Craters of 50 to 100 miles in diameter and with central peaks to match like those we see in such abundance on Mercury, Mars and the Moon do not exist on Earth. It may be that our ocean basins are of the same origin as the featureless plains on Mars except on a more gigantic scale to match the larger size of the Earth as compared to Mars.

I grant that most of the above observations are speculation and should be taken as such. It is true, however, that much of present day theory about Plate Tectonics and sea floor spreading is equally speculative. Both are based upon physical evidence that can be seen and tested and compared as time marches on and more and more data is gathered.



A map showing directional trends of mountains in the Basin & Range provence of western United States and Mexico. The Columbia Plateau is predominently flat lying, layered lava flows through which the Columbia River cuts its canyons.

The clongated north and south ranges of mountians extending down into Mexico are all lava or metamorphic rocks.

The Colorado plateau is one vast area of so-called "sedimentary rocks", limestone, sandstone, and marine clays. All of these beds lying level or nearly level are tilted up toward the west on the east side and tilted up to the east on the west side----show probable gravitational uplift of basin.

THE GRAVITATIONAL DISRUPTION OF MARS: SPECULATION, THEORY OR FACT?

The possibility of planetary disruption by gravitational force has been known since the time of Newton, possibly before, yet it is remarkable how little thought has been given to this subject. It is especially remarkable in the light of recent lunar explorations and since the Mariner 9 probe has brought us relatively close-up photos of Mars with its super canyons and mountains. Perhaps some of this lack of interest is due to the insistence of the earth scientists in the Space Program trying to explain every new feature seen on the Moon and Mars as of volcanic origin. Apparently they see no connection between volcanism and massive impact or gravitational forces; that either one or both of these forces could be the cause of volcanics; that volcanics may be nothing more than the minor adjustments that take place as these bodies strain to reach a more perfect equilibrium, a more perfect geoid.

The Moon, being so completely under the power of the Earth's gravitation (so that it is always held in the same position facing the Earth), has little or no cause for volcanic eruptions since there is no rotational force acting or possible movement of crustal elements such as those found on the Earth. On the other hand, the major impacts, as represented by the large maria (all of which are on the near side of the moon facing the earth), must have been greatly enlarged at the time of impact by the gravitational pull of the Earth, while the lava from impact was still molten hot. Other than this one possibility, there appears to be no other evidence of gravitational encounter on the moon.

The face of Mars tells this same story of tremendous impacts, impact scars even larger than the maria on the Moon. This was quite a surprise to some space geologists who had expected to find conditions more like those on the Earth where only a few small impact craters were recognized by geological science. The Mariner 9 photographs, however,

showed tremendous craters: Hellas, 1,450 miles in diameter, Elysium, 910 miles across and Argyrel, about 730 miles in diameter. All three of these craters appear to be very old with smooth outlines, probably filled with dust blown from the highlands and by splash from later impacts.

But Mars has another and different story to tell; a gigantic canyon scar and immense volcanoes that give evidence of a terrific gravitational, disruptive event.

The huge canyon, Corporates, just below the equator, is approximately 2,200 miles long, more than 300 miles wide and according to news releases, more than 20,000 feet in depth, or four times as deep as the Grand Canyon. The canyon itself is fairly straight but curves at either end to form an elongated, flat-lying "S." (See Mars Chart Fig. 1) The length of this canyon scar along the curve is over 3,300 miles and if we consider the whole area, including the volcanoes, we get a total distance of about 4,400 miles or approximately a third of the circumference of Mars.

What is the origin of this tremendous canyon and the huge volcanoes, the largest of which, Nix Olympica, is said to be 300 miles in diameter and over 15 miles high? Why should Mars possess canyons and volcanoes so much larger than those on the Earth?

The most logical answer seems to be that this great canyon and the huge volcanoes are of the same origin, a single event, when some very large comet or other massive intruder from space passed too close to Mars. That this caused a tremendous bulge, miles high, that burst open at the top and spewed out lava and great chunks of Martian crust, much of this material following the intruder into space. Some of the lava may have reached the Earth as tektites and some of the crust as stony or stony-iron meteorites. When the intruder had passed the tidal bulge slumped down along the sides but the stripped-out center left the canyon we now see but was then filled brim full of molten lava. This long lava pool had to subside to refill

the interior from which it had come, but there was also a subsidence of the walls along the canyon in a series of stair-steps paralleling the main canyon walls. This same kind of formation (but probably of different origin) can be seen in one graben section of the African Rift south of Nairobi. It consists of parallel benches in the rift valley, which at this point is perhaps 15 miles wide and about 2,000 feet deep, each beach separated from its neighbor by vertical lava cliffs which vary in height from a few feet to well over 100 feet.

The lava lake in this Martian canyon soon began to subside, as it found passageways into the depths below, ~~and~~ As it lowered over each cliff lip, it cut canyons down to the next lower bench, probably accompanied by many Martian quakes. (See photo A).

These small canyons cutting back into each step or plateau have all the appearances of water-cut-back canyons as we see them on the earth and this evidence has caused considerable debate among scientists as to whether Mars once had water in some of its lower areas or even small oceans. However, there is no reason why liquid lava flowing to lower levels over such escarpments could not have produced similar cut-back canyons.

Obviously, some force other than moving water or ice must have made this huge canyon stretching nearly a third of the way around the Martian equator. It ~~had to be~~ could have been an outside, gravitational force because no such vast section of any planetary body could slump down in a volume in excess of a million cubic miles. The pressures are too great for voids of such size to exist in the interior of a planet. Besides, there is no evidence of water erosion or sedimentation to be seen in the enlarged Mariner 9 photos, no evidence that water ever filled this canyon, no sign or delta fans or eroded stream channels crossing the plateau. And if there was any water on Mars, this canyon should have been filled with ice.

This super "Grand Canyon" on Mars with the uninspiring name of Corporates, is only a part of the total disruption scar which begins with Nix Olympica, 1,800 miles beyond the west end of the canyon.

At this point it must be explained that we have assumed that the intruder (much more massive than Mars) was moving in the same direction as Mars and in the same direction as the Martian rotation about its axis. This nearly parallel movement of the two bodies provided a relatively long period of time in which the gravitational forces could act, and because of the curvature of the Martian surface and because the intruder must have been moving in a nearly straight line, the gravitational wave rose swiftly to a peak and as swiftly subsided, as the rotational surface of Mars pulled away from the path of the receding body.

As the intruder approached, the first effects were the eruption of the great volcanoes; first Nix Olympica and then the three large volcanoes THAT have been named South Spot, Middle Spot and North Spot and, with the addition of the two smaller volcanoes to the north, they indicate the width of the path of destruction. As the intruder came near, a huge circular mound or wave was raised up miles high, passing across the face of Mars like the shadow of a solar eclipse, the unseen force ripping up the crust in great chunks which either leaped into the sky after the intruder or fell back in place. The volcanoes were the first part of this cataclysmic event and probably represent weak spots in the Martian crust where the gravitational force sucked out the heavy lava from the interior. The three spots are each about 150 miles across the base or twice the size of the island of Hawaii, which is the Earth's largest volcano.*

Nix Olympica is located in a large depression about 500 miles across and was probably an old impact crater of considerable depth. This provided the weak spot in the Martian crust where the lava broke through to pile up in a peak 15 miles high. As the intruder passed by and the

gravitational pull diminished, the top of the peak fell in to form a caldrea crater some 40 miles across and the mountain itself, nearly 300 miles across the base, sank down to compensate for the loss of lava beneath. This, in turn, pressurized the surrounding area and produced several large outlying lava fields. In the matter of interpretation of the photographs of Nix Olympica, there is still considerable disagreement as to what the shadows mean. The first pictures taken show the top of the mountain rising above the dust cloud which proved that it was a very high peak. Later, when the dust cleared away, the first photos published showed Nix Olympica in four composite, overlapping pictures that made no sense as to shadows because the pictures taken from the fast-moving Mariner 9 were spaced about 250 miles apart so that the light came from difference directions. This is proved by the circular shadows cast by the Martian satellite (probably Phobos) that can be seen in tow of the pictures and measured as 250 miles apart. (See National Geographic, Feb. 1973, pp 234) Later, the shadow problem was cured by what were termed "computer-enhanced" photographs, so that the light came from one side. This makes the mountain look like a typical volcanic cone with a crater in the top, except that it is surrounded on all sides by a very steep escarpment that, according to scale, must be at least 10 miles high. This would mean that the mountain would need to be at least 50 miles high to get sufficient slope for the lava to flow so far under the reduced Martian gravitation. Terrestial volcanoes are not to be found with this kind of basel escarpment because it cannot happen under the physical laws involved, no matter what the size of the volcano.

If my interpretation of the photographic shadows is correct, the Nix Olympica is a mountain peak some 15 miles high with a caldera in the top, the whole mountain having slumped down to form an outer crater wall some 10 miles high with many minor slump canyons breaking down from the crater

rim. It is not an impact crater with a high central rebound peak such as some found on the moon. (See line drawing illustration Fig. 2)

Returning to our description of this cataclysmic event, we continued some 400 miles eastward along the path of disruption to where the gravitational pull became strong enough to break the tidal bulge into big angular chunks which dropped back again as the wave passed. This can be seen as an area of cross-hatched cracks and blocks at the western end of the canyon. (See Fig. 1) Then as the tidal pull built up to its peak it began ripping open the bulge and carrying away huge chunks of Martian crust into space, probably well lubricated with hot lava. Some of this debris was no doubt captured by the intruder but most of it probably went into orbit around the sun or possibly into orbit around Mars. This may be the origin of the Martian satellites, Diems and Phobos, chunks of Martian crust covered with a layer of lava that was pock-marked by collisions with lesser debris at the time of the event. We also speculate that this may be the means by which comets have originated, growing into larger and larger masses over vast periods of time and additional disruptions until they gain sufficient mass to be welded into a solid sphere called a planet. Gravitational disruption may have something to do with the history of the heavy inner planets whose specific gravity is too great for them to have originated out of the primordial solar nebula, but they might have accreated out of the heavy interior elements of some disrupted planet or planets. Reason dictates that comets must have originated out of gravitational disruptions rather than actual collisions because collision on such a scale would produce mostly vaporization and a scattering of whatever material did not vaporize, whereas disruption, as pictured above, would pull out a train of material in one direction that could easily form into a comet.

To return to our picture of disruption, a huge tidal bulge

DID GRAVITATIONAL RIPOFF DIG THE GRAND CANYON?

Carlsbad, California, November 15, 1987

A few days ago while reading an old 1973 paper of mine on the gravitational disruption of planetary surfaces, I noticed that I had suggested that the Grand Canyon might have been of that origin because it has the same elongated S-curve form that of the huge canyon on Mars. On further thought, the insight came that the wide, flat area on either side of the Martian Canyon on Mars was like the Colorado Plateau. The Grand Canyon Plateau (the Kaibab Limestone Plateau) might be an old continental shelf or perhaps a very ancient impact crater basin of huge size like Argyrei, Hellas or Elysium on Mars. Elysium is a little larger than the Colorado Plateau. (See Fig. 4 - map of Mars).

The Kaibab Limestone is over 600 feet thick, one solid deposit without intervening beds of other material and now its top is over 5,000 feet above sea level and with 4,000 feel of level sedimentary beds below (See Fig. 2 - a cross section of the Grand Canyon). Was this thick bed of pure limestone laid down over millions of years in the shallow, warm waters required and then raised steadily to produce a 600 foot depth of lime mud without any intervening layers of sand and clay? Or was it laid down in one great gravitational oceanic flood and then raised to 5,000 feet above sea level? Or was it done by impact - oceanic flood?

The Grand Canyon is the only canyon of its size and kind on the face of the Earth and it resembles nothing quite as much as the giant canyon on Mars. How shall we solve these mysteries, these remarkable anomalies? What physical features shall we consider?

We know from recent oceanographic explorations that much of the deep ocean floor is covered sparsely with flat-topped mountain peaks called Guyots. These Guyots closely resemble the flat topped monuments of Monument Valley. It is plain that all those in Monument Valley are near the same height above the surrounding valley floor and geologists

have long ago suggested or claimed that the area between the monuments was slowly eroded away over millions of years. This raised questions. If the material between was clay and eroded easily, how did the sandstone stand up without any apparent erosion or weathering? How were all these tall monuments and chimneys of Navajo Sandstone, nearly 1,000 feet high, laid down slowly in the clay as it was deposited and kept 99% pure (free of clay) and the clay free of sand? (See Figs. 1 and 2).

Why has the sandstone everywhere in the canyon and Monument Valley weathered and eroded in vertical walls? If laid down with clay in the ocean slowly, why didn't it erode in the typical "V" shape?

Why is both the clay and the sandstone so free of salt after being deposited in the ocean?

This brings us to the choice between impact - oceanic flood and gravitational disruption - how it happened, when and why.

Beginning with the Precambrian conglomerate on top of the basement rock, we see in the cross section some 4,000 feet of level deposits of different materials, each layer quite thick (see Fig. 2). This I see as eight different oceanic floods due to impacts of as many asteroids of different sizes to the top of the Kaibab limestone while this basin was still beneath the sea. Then the whole basin began to rise steadily without any tilting of the layered beds, something of a miracle, but proof that nothing stuck in this area. At some point in time, but close to when it reached its present elevation, a gravitational rip-off created the canyon and removed the great bulk of the Navajo Sandstone and whatever clay was mixed in with it. The tall chimneys and bulky monuments were left standing by pure chance. The reason they were <u>not</u> tipped over or pulled away but the passing intruder was because the intruder was far away, perhaps 25,000 miles or 250,000 miles depending upon the size of this swift passing object. The pull was quick

and straight out from the surface of the Earth. This is why the hard sandstones in the canyon were left standing in vertical walls and not cut by slow water erosion into "V" shaped canyon walls. The best explanation is that the Grand Canyon was built all at once by a gravitational rip-off (see Fig. 3).

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As I have described in a previous paper on the possible gravitational disruption of Mars, the passing intruder pulled up a huge mound on the heavily cratered surface of Mars, breaking it up into small pieces and shaking it down in passing with a thousand huge earthquakes (see reference list). All water, ice and loose material was pulled away into space and as the two bodies came closer together, the huge mound broke open suddenly and great chunks of Martian crust were pulled away into space after the intruder, leaving the 15 mile deep canyon named Corporates, with no evidence of why or where the missing crust was transferred.

As the two bodies began to pull apart, the great chunks of crust fell back into place looking like cracked mud in a dried up pond.and the traveling mound was lowered (see Fig. 4). Then came the three huge volcano-like mountains in a row and finally, Olympus Mons, the huge pseudo volcano that is 15 miles high and 300 miles in diameter with a peripheral wall that is 10 miles high and a slumped caldera in the top that is 60 miles in diameter. This mountain of lava must have been pulled up from an old crusted over impact crater where the lava below was still molten hot. This old hot spot was so large that it provided for a mountain some 50 miles high which slumped in passing so that a peripheral wall was left standing. Otherwise, Martian gravity would have pulled this wall out into a thin edge. The top of the peak simply slumped to fill the pipe below. All of the smaller craters at the end of the path of the destruction have the same slump caldera in their tops, but no peripheral wall. (See Fig.___)

The sandstones in the Grand Canyon, both Kaibab and Navajo, are very finely grained, very hard and very pure in content. How did this happen? Modern erosion through a varied content in watershed does not produce these tremendous thick beds of crossbedded sand over hundreds of square miles and thousands of years. As the season varies with storms, floods and low water, the material deposited varies in grain size, depth of layering and quantity. There is no uniformity.

Here is another mystery that can best be solved by major impact and world wide oceanic flood. The first great rush of water was often over a mile deep depending upon the topography. This first motion of the water took all the fine material that had been accumulating on the continental shelves for millions of years and a great deal of the course material up to the size of large boulders and carried them far inland and up against the mountains where they were dropped along with lesser debris. The very fine sand, clay and loess remained in suspension along with the dissolving salt in the ocean water. As the flood water abated, going and coming as gigantic tides, the lowlands were eroded into canyons above sea level and into submarine canyons below seal level - across the continental shelves. When these gigantic tides finally abated and the Earth stopped shaking from earthquake re-adjustment, the fine grained sandstones (Kaibab and Navajo) settled out in thick beds very quickly. The fine clays in suspension hesitated and settled more slowly so that the contact lines as seen in the Grand Canyon are only a matter of a few inches in depth. The loess, lightest of all because of its partial organic content, settled out on land above sea level earlier.

The salt remained in solution and this is why so little of it was left in the sandstones and clay.

The above observations and speculations are based on good scientific methods. I invite criticism from laymen and scientists alike. It may be ignored, but it is now in

writing like a legal document, subject to change as criticism or better solutions may be indicated, however, they make one think about the whole picture, all of the theories of origin, all of the anomalies seen in the canyon and the Colorado Plateau that have been debated and ignored and left in limbo because of lack of reasonable explanation.

A few weeks later---January 10, 1988.

Further thought on the subject has convinced me that neither the orthodox theory of Uniformity or Impact Oceanic flooding can solve all of the problems. I am convinced that gravitational disruption is the only possible explanation and it has it's limitations. Just the building of this plateau in some deep ocean basin with all the ups and downs necessary to produce the very thick and pure land sediments and then the undersea limestone deposits is enough to stall any theory, and why the rivers or flood waters did not move around the plateau instead of cutting through it is perhaps the basic mystery. This leaves the debaters with only one power left of sufficient size to cut the Grand Canyon down to bedrock, all in a few moments of time. Canyon Corporates on Mars is the only feature like it that we have seen so far in our planetary explorations and it requires a scenario, planned to near perfection as to sizes and distances, etc. So all of these theories are based upon speculation and assumptions, but what else is new? There must have been a BIG BEGINNING.

Sincerely,

Allan O. Kelly

(Fig. 2) ATLAS OF LANDFORMS
United States Military Academy, West Point, New York.
Copyright 1965

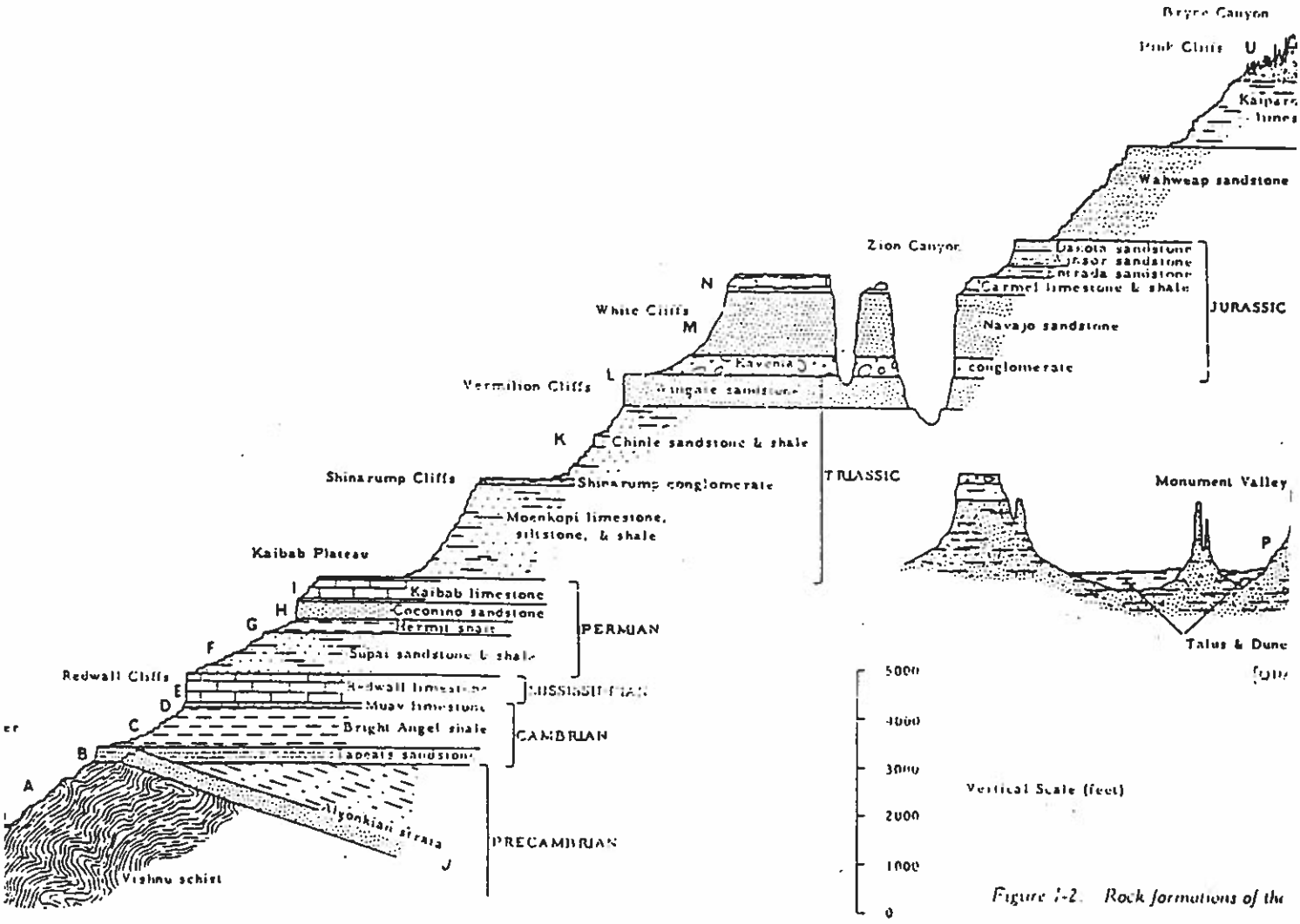

Figure 1-2. Rock formations of the

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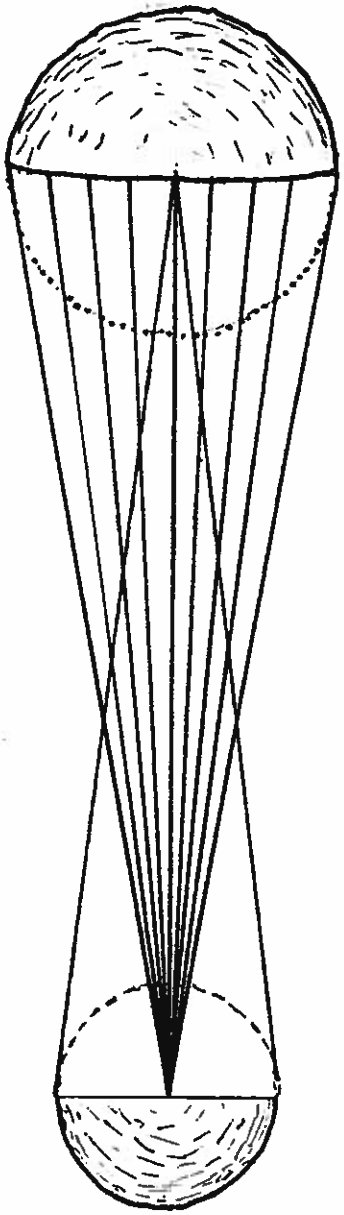
This drawing looking down on the two bodies illustrates how (given sufficient distance between them in relation to their respective sizes and their gravitational masses) would allow the gravitational pull to come at right angles to the surface of the planet and thus make possible the vertical walls in Canyon Corprates on Mars, and the Grand Canyon on the Earth. This requires a number of speciel circumstances occurring all at once. However, it does not violate the law of gravity or the second law of thermodynamics as Mars moves in its orbit.



The Intruder

The Earth

Fig. IV

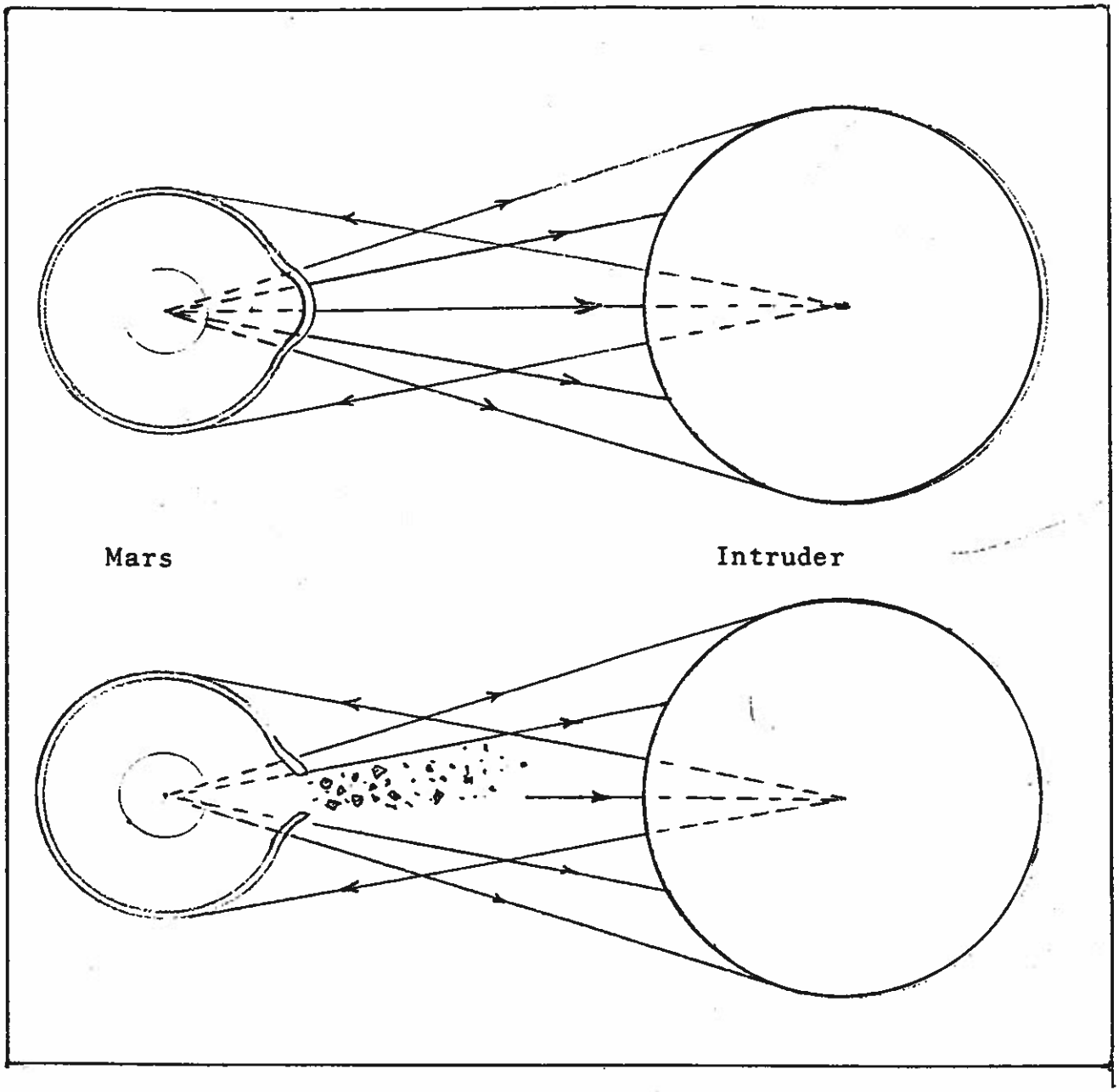


Fig 1-A. Showing how the superior grivational pull of the intruder first produced a bulge on the surface of Mars and then ripped open that bulge to draw away large sections of Matrian crust. The intruder had to be much larger than Mars to overcome the gravitay of Mars and pull away large volumnes of Martina crust.