

# The Great Crater Conundrum

The Great Crater imposed by the writers of Wrath of the Immortals pose several issues which seem to totally negate laws of Physics.

A meteor crater of that size should have had much, much greater impact, or even be a global destroyer. The writers totally ignored speed, mass, volume of the crater and only hinted at these. They further ignored the effects of impact. The total disintegration of the region impacted upon they however did not ignore. A vast and very deep and steep crater was created in their minds. Yet there was only a rim of destruction around it, only a few 8 mile hexes wide.

They spoke about the dust affecting growth in Darokin and Alfheim/Canolbarth. And severe quakes knocking down buildings as far as Akesoli.

The map depicts a crater of just over 80 miles in diameter.

## **Wrath of the Immortals says;**

Summer, year `1006 AC; The Master's Revenge.

The Master of the Desert Nomads has been defeated. his forces retreat into Sind and tighten their grip on that unfortunate country. Their Immortal Atzanteotl, disgusted by the Desert nomads' inability to get the job done, washes his hands of the whole affair. as a final defiant gesture, the master formally curses those who have defeated him.

To everyone's surprise the "curse" has an "immediate and" deadly effect. Only a few days later, an enormous meteor smashes through the sky and slams into northern Darokin. Ironically, its point of impact is directly upon Corran Keep, on the Darokin/Glantri Border.

The Impact destroys an entire range of mountains, creating a crater dozens of miles in diameter. The resulting earthquake knocks down buildings as far south as Akesoli and can be felt as far north as Glantri City. In Glantri, the Principalities of Blackstone and Caurenze are devastated, as is most of Darokin north of Lake Amsorak. The cloud rising from the impact is larger than some countries. Stretched by the last western winds of the season, the cloud covers all of southern Glantri and Northern Darokin out as far east as the middle of Alfheim.

The immediate loss of life is tragic, but Glantri survives. However, the impenetrable cloud stays in the air for days, blocking out the sun. When it finally starts to settle, ash covers everything, killing plants and fouling drinking water. Together the cloud and ash have a catastrophic result on the crops of both countries, ruining the harvest and threatening famine for the upcoming winter. Popular opinion credits the attack to Alphatia; the Glantrians vow to make the Alphatians pay if they have to fight to the last wizard.

This event surprises the master as much as it does everybody else. The Immortal to blame is not Loki(aka Bozdogan in Hule), who knows better than to risk the punishment sure to follow such a blatant act of direct Immortal interference once the Council of Intrusions tracks down the perpetrator(s). Instead, it is Alphaks, whose love of big explosions and mass destruction has finally gotten the better of him. he diverted the meteor from its regular orbit and aimed it toward Darokin; the only reason it did not do even more damage was his desire to make the Glantrians (descendants, like the Alphatians, of some of his ex-followers) suffers as much as possible.

DM's who want to run a strange adventure for mortal PC's or apprentice Immortals can give them the chance to try to avert this disaster, Assume the giant meteor is not aimed for northern Darokin but directly at Darokin City itself.

An astronomer has spotted the meteor and been puzzled by its unusual behaviour--its sudden change of course, and the fact it has grown steadily brighter while not altering its position in the sky (this is because it is heading directly toward directly towards Mystara). he mentions it as an oddity at a party and is overheard by Rheddrian, who sends the PC's to investigate.

Upon their arrival, they learn that the meteor has an atmosphere, so they do not need special spells to survive there. Furthermore, it is inhabited by monsters of all sorts. They will soon note that the world below them is rapidly getting bigger; it shouldn't take too long for them to realize they're on a collision course with the planet.

If the Pc's do their job well and get lucky, the meteor will be diverted far enough off course to land in the relative unpopulated Darokin/Glantri border region, rather than over a major city. Alternative, they could cause the meteor to hit somewhere else--in the middle of Lake Amsorak, or the Broken Lands--or else--or miss the planet altogether, becoming Mystara's third moon.

The rest of Canon material presumes that the meteor hits and creates the crater at the region Darokin/Glantri, if the meteor does hit somewhere else, the destruction will occur at that point, and the DM will have to modify all canon sources to accommodate those differences.

A real world crater over twenty miles in diameter requires an iron meteorite 6000 feet in diameter at an angle of 38 degrees and an impact velocity of 10.563 miles per second.

The initial fireball is 19 miles in radius. Large rocks from 1000 feet diameter near the crater rim out to 8 feet in diameter at over sixty miles from centre are deposited as ejecta. A quake in the 8.6 magnitude hits the Known World. Thermal radiation is igniting trees out to two hundred miles radius (which takes in the western forest of Alfheim) with third degree burns for every living thing out to two hundred and fifty miles (3d6/round). That drops away to first degree burns at three hundred miles. Alfheim city, Glantri city, Darokin city are wiped from the map by a wind blast that begins at the crater rim at over five thousand miles an hour and drops mildly cyclonic by the time it reaches the mountains north of the Five Shires. Total loss of livestock, peasants out to the Wendarian ranges. Stone buildings beyond two hundred and fifty miles are spared. Trees inside two hundred and fifty miles are 90% uprooted, destroyed. Trees at three hundred miles are 30% uprooted, destroyed. Total devastation.

### **Thus far reality as it would happen if Mystara was like OUR non magical world.**

But first these words from Bruce Heard (Dragon 160 Up, away & beyond)

*"The Known World on which D&D® adventures are set is slightly smaller than our Earth, with about the same shape and with a similar atmosphere. Outer space is a vast, airless void, with planets, moons, and other celestial bodies. However, there are certain major laws of physics (Unalterable & Universal Principle's=UUPs) that affect the universe of that world:*

*Magic is omnipresent in the D&D game, which allows DM's to alter 'reality' as they like to fit their fiendish schemes and any general game needs of the moment. Though science and Physics rule the world like in our real world, they are greatly affected or altered by magic.*

*The D&D game is first and foremost a game that puts the emphasis on role-playing and simplicity rather than on hard science (the D&D game hardly qualifies as realistic!).*

*There are no such things as hard rules or preconceptions of any type, including the UUPs themselves, except for the Golden Principle; This is a game meant solely for your enjoyment. Have fun, folks! It's your game and your world."*

Please try to understand that Mystara is NOT our world. It is according canon a living entity, and literally bathes in diverse sources of magic affecting it and all upon it. We totally cannot comprehend the effect that these two factors have upon that world as we do not encounter these. The problem is we as non magic users or magic experience (ever) will understand how magic is able to do things only quantum mechanics can (sometimes even with intense difficulty) do what it is meant for. Reality here on our world does not resemble reality there although there are resemblances and several equal rules. This we try to explain here.

Here are the adventurer diverting options in maps showing the crater and its eventual after-effects.

**1 West Broken Lands/Silver Sierras** as per canon...successfully late downward diversion by adventurers.

Impact effects following Canon; <http://6inchnails.deviantart.com/art/the-great-meteor-impact-of-1009-AC-510359259>

Canon crater in 8 mile hexes in detail; <http://6inchnails.deviantart.com/art/The-Great-Crater-Redone-now-with-better-altitudes-637035676>

**2 Lake Akesoli**....successfully diverted westwards by adventurers...

The meteor slams on Itheldown island and Castle, fully obliterating it. The tidal wave and flood caused by the impact will destroy and alter the region in a much further region. One side of the plateau of Atruaghin collapses, several Darokin cities are gone, there is even flooding in nearby Sind, and the loss is in this version actually the greatest. However, their will be less ash. The rivers will bring lots of debris, thus altering their course continuously, and widening the river south through the Malpheggi Swamp, changing the region over decades. ...[Lake Akesoli](#)

**3 Broken Lands**.....successfully diverted eastwards by adventurers

This will further collapse the area; the lower caves will be disintegrated. And the area will suffer a great upheaval around. Water must be rediverted (and the Streel River is cut short. The River out of Darokin will first decades create a lake, until the water is high enough to bypass the Broken Lands on the west side of the crater. Several villages will be fully inundated or destroyed. Corunglain is covered in the uplifted crater edge and may provide new caves to the Humanoids. The Troll Immortal steps in rapidly and a new Troll Queen settles. Becoming the strongest Troll nation Mystara has ever seen. [Broken Lands](#)

**4 North-west Glantri/ Edge of the Adri Varma**... Successful early downward diversion and crash in Plateau....Diverted Down...thus landing earlier.

This will collapse the edge, and break open the volcanic veins spread out in a multitude in this region. The Averoigne province of Glantri will be gone. Whole the region will succumb to the enormous amounts of dust and volcanic ash in the first weeks, and ash rains will fall from the darkened skies enclosed within the Glantrian valleys for months. And the crater will become one of the largest volcanic areas on Mystara, but with reduced outward effects. The crater will probably be inhabited later by Efreeti and fire elementals.. And be very dangerous to Mystarans (toxic fumes, magma etc.)Glantri will suffer greatly, not only by causing many deaths, but also by loss of crops followed by a massive depopulation. Undead will prosper, making the region of Boldavia the last Glantrian principality. [Edge Adri Varma](#)

**5 Darokin City**...failure in diverting the meteor by adventurers...crash as wished/intended by the Master of Hule or Alphaks.

This will at first destroy the city, devastate region, kill half of Canolbarth trees, send massive shock waves all over the region, nearly obliterating Darokin, and greatly damaging the Cruth Mountains. Soon afterwards it will cut off and redirect most water supplies to the Malpoggi swamp. And the surviving Darokinians will take this to their benefit. They (like the Dutch) will dry out the land and turn it into the most fertile area they have. In effect this will eventually radically alter Darokin, but in a better sense.; [Darokin City](#)

**6 Moon**...successfully diverting up by adventurers missing Mystara completely (by a hair)... passing shortly through the atmosphere ...slowing down due the Skyshield and maybe becoming a small third but retrograde moon or passing on beyond. Any life on it would die (due lack of light, food growth, temperature) or try to leave before cold and another near disaster would affect it.

So we have several options for meteor impact. But this does not negate the effect that the meteor would be a great destroyer in our Real World, with devastating effects, blasting Glantri, Darokin and many more nations of the world by wind blast, fire blaze, impact quakes, dust accumulation, crop and water pollution, etc, etc.

There are a few options remaining which all have to follow a logical solution, reason and effect. By choosing another than the canon suggested option keep in mind you have an alternate reality and so must readjust everything around it.

#### **Option 1; No meteor impact**

On the version Micky uses in his excellent works of Glantri; <http://www.thepiazza.org.uk/bb/viewtopic.php?f=3&t=2331> suggesting that the meteor never did impact on Mystara. This can be done by completely erasing this canon fact from the timeline of Mystara, and he worked the canon suggestions of destruction as from Wotl in Glantri by causing a vast attack of the humanoids from the Broken Lands.

Another variation to resolve the meteor in Micky's fashion can be done by letting adventurers redirect the meteor to become the third moon, or pass beyond, as pointed out above.

Kol;..why does Kol move to the Silver Sierras(if further following canon but without a crater)? This can be because as according the Tower of Doom and Storm over Mystara games, there was a huge red dragon living in the Silver Sierras (I have mentioned him in the dragon section). There is also some frolicking around with a lich, evil shadow elves, and a magical crystal tower of doom. What if that large red was the major reigning dragon in the Silver Sierras and was defeated by subdual in an ultimate battle with the lich. This enables the creating of a niche in the power and ecology of the region kol could take benefit from. It also makes the reason of the red dragon so near to the lich in the pc game more logical...it is under control...

What if all these factors together have some effect on the reason why Kol and many other humanoids moved west, As in Storm over Mystara another Red Dragon Synn is named, it might be very possible that her agenda steered the humanoids into the Silver Sierras.

#### **Option 2; Smaller Meteor impact, with canon side- and after-effects.**

On the version of Sean Meaney; Reducing the Meteor and crater in size still following our Real World Physics and sort of maintaining the meteor after-effects as of canon.

[http://www.pandius.com/an\\_examination\\_of\\_the\\_great\\_crater.pdf](http://www.pandius.com/an_examination_of_the_great_crater.pdf)

To reduce the destruction we need to reduce the meteorite to 1000 feet diameter, at 45 degrees entry, producing a crater 4.5 miles. A fireball of 1.92 miles radius. A 7.0 quake. This means much less destruction. Hill sized boulders at four miles radius with four thousand mph wind blast. Boulder strewn out to twelve miles with one thousand mph wind blast. Three foot rocks at twenty miles with a 537 mph wind...

So living things out to 36 miles take third degree radiation burns. Winds are catastrophic at 214 mph. 90 percent trees down, wood buildings, stone towers. At 44 miles radiation is second degree burns. Air blast of 154 mph downs wooden structures and 90 percent of trees which are still catching fire. At sixty miles the radiation drops to first degree burns. Gravel ejecta, airblast of 188 mph knocks down 30 percent of trees and removes wooden/tile rooftops. At 68 miles there is no radiation. The wind gust is 77.3 mph. Dust and gravel rain from the sky.

Thats far more manegable for the setting aftermath though the crater is far smaller.

Option 1 could also be resolved by using this option.

### **Option 3 Canon meteor impact and after effects with Mystara Physics.**

Then we have the option as according canon(Wrath of the Immortals/WotI, Poor Wizard Almanacs and Glantri Kingdom of Magic/GKoM), though this needs a lot more explaining of the world of Mystara, and several other things to come about and make this Mystara-style physical possible.

This option resolves around the cellular structure of the planet as detailed canonically and compiled here, but needs a detailed explanation, which follows here.

Canon Map study of the crater. <http://6inchnails.deviantart.com/art/Great-Crater-615077583>

We have only 3 canon maps, one from WotI in 8 miles hexes, and two later versions from GKoM (the AD&D2 Glantri gazetteer update with many flaws). These maps already seem to contradict themselves in effect. As the original source WotI deemed the most thought through this is takes as a lead.

We have the following combined canon data;

1 According Canon; Damocles the fifth planet exploded in 1000 AC, some remnants still succeed in maintaining an atmosphere where survivors remain.

2 According WotI; Alphaks redirected a floating rock in space towards Mystara.

This suggests clearly that there is a great chance that the meteor is a remnant of Damocles.

The master may have summoned a curse, but he himself does not have the power, Atzanteotl withdrew from the field, Loki/Bozdogan was clever enough

to do not break Immortal Rule. And Alphaks was most probably not even aware of the Master uttering the curse; this is solely his own judgement, probably based on a personal resentment towards the Darokin victors, Alfheim Elves and Glantrians. Targeting the central position of Darokin, all of these would be affected even if the meteor is redirected somehow. The Master was surprised what "his curse" did, and in effect he had absolutely no effect on it or its creation, as thus his curse was just an uttering, and angry insult, but not a curse in the magical sense. Alphaks would probably have expected mortals (or junior Immortals) intervening and affecting his plan, and thus only a slim chance of failure would remain.(in the case of the meteor being redirected away from Mystara). It does not tell if Alphaks sped up the meteor, only redirecting it. It can thus be assumed, he only gave it a nudge and general direction towards his intended target. Which is a feat onitself as with low speed and the movements of both the metor AND Mystara, this is difficult to make exact. But lets assume Alphaks, as an intelligent Immortal can calculate this.

Alphaks may be not as aware of Mystara being a Megalith as some other immortals are. According to the gold box only a few immortals know Mystara aka Urt is a living creature.

Also using his immortal power move a celestial body costs him 1 permanent power point, and it is not noted for altering its speed... as thus we can also assume the asteroid (with atmosphere envelop) had its original lower speed...thus further debunking the size of the crater. Alphaks must or be completely oblivious of the population/atmosphere on the asteroid or truly hate the inhabitants for imposing such a fate... Also, as seen by the meteor's low speed, Alphaks must have done this years before WotI did happen, probably even during or direct after Damocles' destruction.



3 According to the meteor adventure suggestion of Wotl, this piece of rock has an atmosphere. And as thus we actually can't call it a meteor anymore but a wild Asteroid or even wild Planetoid instead. Wild constitutes for the non-orbited trajectory. Just for the simplicity we will continue the denomination of Meteor.

4 According to the meteor adventure suggestion of Wotl, 'They will soon note that their world below them is rapidly getting bigger; it shouldn't take too long for them to realize they're on a collision course with the planet'.

These hints suggest that the meteor is SLOWLY moving towards Mystara and NOT with a high speed. This is based on that an atmosphere will be ripped away when speed is higher than a certain maximum; the speed a normal meteor uses is way higher.



Secondly the PC's on the meteor see Mystara rapidly getting bigger; to see and recognize Mystara they need to have a visual base to be able to recognize the planet, which sets the meteor much closer to the planet. As the adventure also includes time to resolve the adventure (suggested relocating heavy matter to one side is suggested—which would take several hours at best, even with magic) also constitutes to the fact of a slow speed to enable the adventurers to succeed.

Thirdly the adventure suggestion speaks of rocks to relocate and alter the course of the meteor, which suggest that the meteor is at least partially rock based instead of metal based. This would greatly diminish its expected mass.

All these greatly affect the impact of the meteor on Mystara.

5 According the Gold box Immortal Set (also here; <http://breathofmystara.blogspot.nl/2013/04/the-megalith.html>);

Mystara is a Megalith, a living cellular creature. The planet is thus cellular and has no tectonic plate movement as in our real world. The whole structure is different, although outwardly seems similar to our real world. The monotony of a Megalith's life is broken by cycles. Each cycle consists of two phases, active and dormant. It is currently reaching the midpoint of its current active phase. In the active cycle, the megalith is fully awake and Lawful in alignment. It observes its surroundings and examines itself constantly, noting the appearance and disappearance of life forms on and within it aiding their development and defending itself.



map by thorf

6 According the Gold box Immortal Set; Mystara, aka Urt, has 5000 power points available to be used. In its active phase, a megalith can use all forms of Power attacks, and can create any magical effect within its Sphere by standard procedures. The range of such effects is measured from the creature's outer edge, not the core. Of generally good intentions,

a megalith will try to avoid unexpected movements while awake, for such can damage or destroy the life forms. The Immortals made special arrangements with this creature, which is known to them as Urt, before starting to cultivate life forms upon and within it. These were that the creature will NOT expulse its outer layer where life resided (as *Mystara is millions of years older than a Megalith its cycles, the agreement would probably be that the creature has an expanded lifetime, with many active and inactive cycles following each other, but no expulsion as per Gold box canon*).

7 According the Gold box Immortal Set; The creature (though magical itself) has a 75% Antimagic, but it is not said this is constantly active, or can be called upon. However, the coming and going of magical vessels clearly state there is mostly NO Antimagic active, thus it is best assumed this can be called upon. It is unknown of this power is general or directed. As the core of the planet's crust (aka the World shield) is 100% Antimagic, it is best assumed this is the mind of the creature or at least holds it consciousness, but it also implies that the source of anti magic is reduced in strength beyond the planet...aka beyond its Skyshield.

Especially the Antimagic could be seen as a defensive measure of the creature, which could be the reason for the slow speed of the meteor, even while it was magically propelled by the Immortal Alphaks. It thus could well be assumed that the magic is nullified, or decreased, and with that the reason for its speed reduction. If the power of Antimagic was directed no other magic would be affected, if however it was general, all magic nearby would be affected (including the magical invisibility of Mystara's invisible moon, Pandius (the invisible Immortal city, and any magical vessel nearby).

Mystara/Urt is nearing his mid active phase and as thus fully aware of its surroundings as per canon. It can and will thus notice anything advancing towards it, especially if it is magically charged, as with the magic propelled meteor.

Its first act would be using the Antimagic to negate the propelling effect. As Alphaks gave the meteor a magical push, he himself is not available, else the other Immortals would more easily detect him breaking the Immortal Rule of direct interference against mortals, also if he would have been there the adventurers would have no chance and the meteor would have hit Darokin.

Secondly it will use Power to charge magic. As being a Matter creature, it will be slow in this thus would be more prone to lower level spells. Spells created by power are unlimited and based upon the HD of the caster, which is in this case over 5000.

This enables toe Megalith at least to slow down the meteor when it hits its Skyshield where the protective spells will be centered (just like mortals most defensive spells are a short distance away from the material body, and often follow the range of the corporeal aura which is maximum of 2 inch away from the body. The Megalith uses its Skyshield for this purpose.

8 According Gazetteer Alfheim/Alphatia, Terminal velocity; also here

<http://breathofmystara.blogspot.nl/2013/10/the-lost-tables-jumping-and-falling.html>

What is read in Wotl, Alphaks only redirected a piece of debris to affect Mystara, he did not increase its speed, and did not make it magical. And even if he did so, the Antimagic effect of the Megalith would nullify this, making it a non-magical projectile and which would thus be affected by the magical spell charged Skyshield if that indeed has the Protection from missiles +shield effect. Though not fully stopped, it would initially still have some of its speed, but it becomes further slowed passing through the Skyshield and the protective magic of the Megalith making it fall down in the 38° angle, by its speed and normal gravity and that is about maximum terminal velocity, which is on Mystara  $192' \text{ second} = 328.04 \text{ m/s}$  or  $1920'/r = 1920'/10 \text{ seconds} = 585.12 \text{ m/10 seconds}$  which is way slower than the real world meteor that was suggested.

With 80.000 feet distance this would take the meteor roughly 416 seconds or 41.6 rounds, which is a bit under 7 minutes, just enough for magic users on the meteor to teleport all those onboard into safety.

9 According Wotl; The Meteor's atmosphere.

The meteor's has according the adventure option an atmosphere where Mystara inhabitants can breathe. When entering Mystara's atmosphere the meteor's atmosphere will be ripped away by the Skyshield, but leaving all air inside, as with all faster than slow moving objects passing through the Skyshield.

The Instant cold of space and the upper echelons of Mystara within the Skyshield and the pressure due its speed, passing through the Skyshield, passing through the protective matter, there is a lot of heat generated (compression, as well as friction/viscosity). This boils the meteor (many meteors contain ice or dry ice), leading to a build-up in pressure.



The meteors atmosphere being ruptured as it passes the Skyshield of Mystara

10 The meteor shape, size and mass.

There is no mention on size of the meteor, and there is only one source displaying the size of the meteor, according to the illustration of Wotl, where a galley is tossed in the air, the meteor had a size of roughly 20 galleys in width, and about 35 galleys in length (even if taking distances into account. Estimating an average galley being 60-90 feet long, means the meteor was roughly between 1200-1800 feet wide and 2100-3150 feet long.

Clearly not as large as suggested with a real world meteor, as mentioned above, by calculating back from the size of the crater.



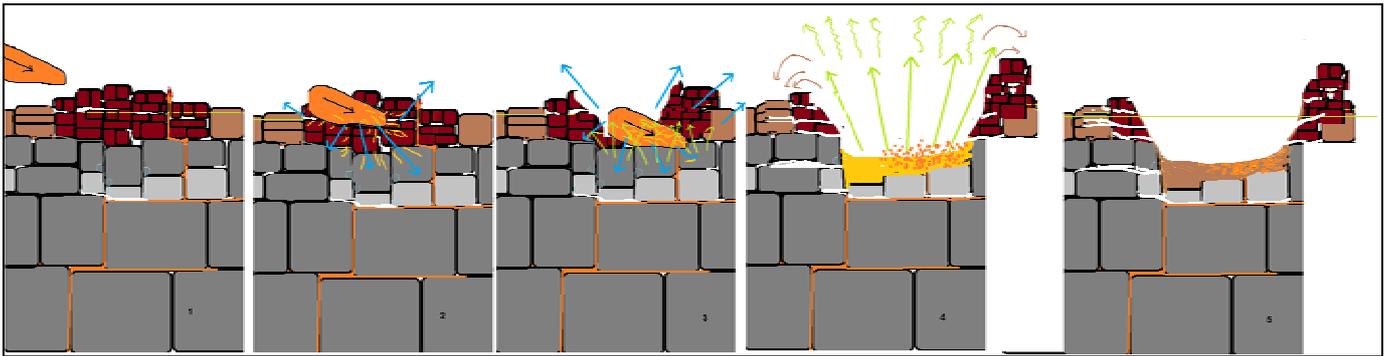
The meteor impacting at 38 degrees through the upper cells of the Megalith in the Silver Sierras.

As there was an atmosphere before passing Mystara's Skyshield, and there was spoken of at least a large amount of rocks and rocky material, this decreases the amount of heavy metal, thus lowering its general mass. The meteor's shape however seems to be a rough potato; a bit elongated yet still rounded, with the side directed towards Mystara's crust smaller in circumference than its section at the end. The curvature drawn on the illustration even suggests a circumference of half that of the back end, making it more 'arrow-shaped'.

11 According to Mystara physics; the actual impact

Mystara is canonically a living cellular organism, without a solid mass and tectonic like on our real world. To enable such a large crater to come to be with such a reduced mass, and speed, there must be another reason. The meteor with its current speed, though reduced was not enough to affect its trajectory, finally hits the ground, pierces through the upper smaller cells of the Megalith (its skin), and penetrates through the larger cells below.

As you see in the simple cut through of the silver sierras, you notice prior to impact rows of chaotic surface cells (dark brown), placed upon more regular rows below (grey), with here and there new cells (light grey) in between. The new cellular growth depletes the cells above it, and vacuises it, where the cell has no contact with its exterior, and its walls keep the cell intact. Pushed up by increased pressure from the newer cells below; the greater cells are thus very tensed, and slowly organically grow up. And normally would have increased the height of the Silver Sierras. The upper cells, have lost their major biological function (like skin) and are pushed out and up (like the upper/outer skin), in between these cells are a lot of caves and empty space. Normally these vacuised cells would eventually rupture and collapse into itself, becoming dark skin cells.



Stage 1 just before impact

Stage 2 meteor (=dark orange) sharper side pierces upper cells (silver sierra mountains =brown. Energy directed with direction (=bleu) and causing breaks (=light orange). Upper cell material pushed aside, along indirect reflecting energy lines, thus creating new mountain range SW of Blackhill, pushing most material further into the east

Stage 3 meteor penetrates lower cells, and causes an implosion within the already tense cells on the older cells caused by the creation of more recent cells (=light grey). Pressure within Meteor increases, and meteor fractures and starts **exploding** at the same moment the larger lower cells start to **implode** due the penetration of its outer cell membrane.

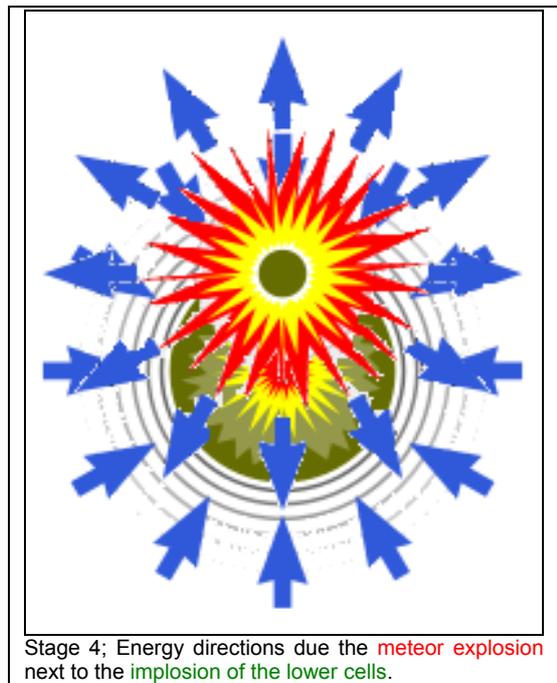
Stage 4 Energy from the meteor is direct in all direction is nullified by the implosion energy from the former tensed cell in all directions but up. The combined meteor **explosion**, **imploding** cells, obliterate the meteor and the cellular structure. Some of the meteor back end (orange dots), is blown up and expelled around the edges of the crater.

In total the reduced speed, smaller size and mass, the **explosion** AND the **implosion** decreased the outward energy, reducing a much smaller shock wave of air pressure not being able to do much harm after about 80 miles/10 hexes. The Glantrian Alps, Silver Sierras and the Broken Lands take the brunt of the blast, thereby saving Glantri City, but bringing more damage to Erewan, Free Province of De Glace, Hightower, Caurenze and even the Free Province of Nyra and Northwest of Caurenze, most as per Wotl, but may be increased somewhat..

The impact also ruptured the outer skin and opened an old magma vein.

**Implosion** is a process in which objects are destroyed by collapsing (or being squeezed in) on themselves.

The opposite of explosion, implosion concentrates matter and energy. True implosion usually involves a difference between internal (lower) and external (higher) pressure, or inward and outward forces, that is so large that the structure collapses inward into itself, or into the space it occupied if it is not a completely solid object, An implosion can fling material outward (for example due to the force of inward falling material rebounding, or peripheral material being ejected as the inner parts collapse), but this is not an essential component of an implosion and not all kinds of implosion will do so. If the object was previously solid, then implosion usually requires it to take on a more dense form - in effect to be more concentrated, compressed, denser, or converted into a new material that is denser than the original. Also, it is helpful to note that due to the processes that cause an implosion, the object reacts from the inside out. A large section of the meteor might thus be compressed into a much heavier form, while the cell(s) collapsed into itself.



Stage 4; Energy directions due the **meteor explosion** next to the **implosion of the lower cells**.

*As the excess gas from the explosion is comparable to the volume needed to fill the vacuum, then the explosion will be small, with little force, and again, only a fraction of the exploding gas will go to the imploding volume. The pressure driving the implosion will be much smaller than the pressure of the explosion. If the explosion produces much more gas than the volume of the cells, then some of its energy will fill the vacuum, but the vacuum will also draw air from all directions. Most of the over-pressure from the explosion will just go in all directions, as it would have anyway.*

*There is little distance to the exploding meteor and the imploding giant cell(s) of the Megalith. The implosion will cause most energy to go inward and only the top of the explosion, though reduced in effect, will have an outward energy. This energy is unlike a normal meteor impact mostly directed upward, and less sideward, due the powers of the implosion. This combined effect will thus greatly diminish displacement of air and severely reduce the sonic blast which would otherwise destroy the whole region. The energy is mostly used to displace the nearby energy, and the more or less horizontal displacement, already greatly diminished, will be further hampered (or even reflected upon the surrounding mountains.*

Stage 5 *Meanwhile inside the crater the implosion and the explosion literally fuse together not only their combined effects upon energy, but also the matter direct in contact with it. The crater is filled with lava, gasses and water from the meteor and the impact site vaporize and escape upwards, more debris, ash clouds and noxious gasses spoiled around edge, followed by a cooling down, no new energy input, materials settle, lava cools and solidifies leaving obliterated debris meteor fragmented within. There are not much remains of the meteor as the implosion and explosion disintegrated much of its mass, this is also the reason there is no central elevation remnant of the meteor itself. The ruptured magma veins in the area of New-Threat (formerly Nathrat), creates a large open air magma lake.*

*The former cellular walls are now the near vertical crater sides dive down in angles of 70-90 degrees.*

Near Future stage *Ripped up and pushed aside skin cells have empty spaces in-between, these caves (=white) will be populated later, meteor debris discovered in molten floor.*

Further Future stage *Erosion will affect crater sides, water will eventually fill crater completely, and flooding many caves, new layer of muddy debris will be deposited in crater.*

Far future stage *Lower newer cells (light grey) recovered from the impact will continue to grow due lava veins and push the crater floor up. (At an estimated rate of a foot per year). Eventually the area will even out, leaving a vast flat half domed area, with a lake within, being a very fertile area.*

*The size of the crater is thus mainly contributed to the size of the imploded cells broken by the meteor, and not by the meteor itself.*

*The angle also explains the pushed up mountain east of the crater on the wrath map.*