

Impactors - Phil Webb & Matt West- What Happens When Partridge Island Hits Greenland at 10 kilometers/sec?

Carl Sagan said that the Solar System is a: “Shooting Gallery”. What he meant is that there a large number of physical objects such as small asteroids and comets moving through it traveling at more of less 10 kilometers/sec and occasionally they strike planets, moons and each other.

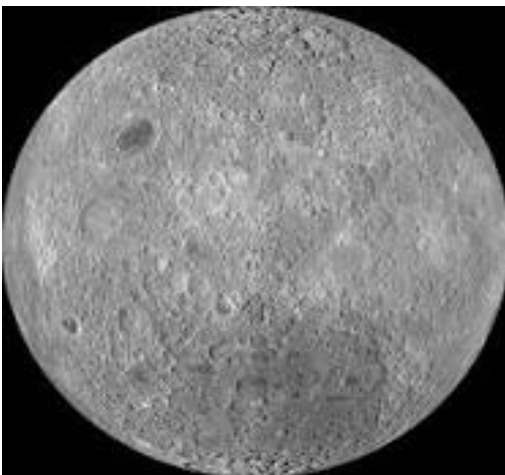
There is a lot of scientific evidence to believe that for the first billion years of the life of the System that the inner solar system, from the asteroid belt inward to the Sun, there were many more collisions and much more chaos than are presently occurring and many more potential “big bullets” moving around. This slowed markedly at the end of this period (Late Bombardment Period) when it is believed that the “big gravitational bullies, Jupiter and Saturn, moved to their present locations AFTER having moved closer to the sun when they caused the Bombardment event.

These are Our Primary “Targets of Interest” in our Shooting Gallery

Target Number 1



Target Number 2



Mr. Physics runs this Universe and the Nastiest Equation in Physics and the one that Hollywood film makers completely ignore is the Kinetic Energy one where the energy of any moving object is $KE = 1/2 mv^2$. Let's now consider the math of this alarming equation.

The three following cases that show that when even small objects go really fast they can generate astonishing amounts of energy:

- 1) A two dimensional situation on a ordinary vehicle road where a driver and car is going 50 km/hour and then the same -car-driver travels at 200 km/hour (4 times faster) in the same vehicle in a local NASCAR like race the following week. Let's compare the mayhem producing KE potential of each situation. Since the only term that changes is the v but it is squared when your car is traveling at 200 km/hr you have 16 times more life ending KE than you had traveling at the slower speed should you leave the road. This is why there is so much potential carnage in NASCAR crashes whereas if you go off the road at 50km/hr you expect the driver to always survive if he is wearing a seat belt.
- 2) A good high school baseball pitcher can throw a fast ball at 100 km/hour and if he were to hit you in the chest it would probably leave only a nasty bruise and an angry batter. Consider however the situation where we have the REAL Superman throwing the same ball at 10000km/hr or 100 times faster. From my reading hypothetically the following could happen: An internal observer would not see anything clearly other than a blinding flash of light from the burning supersonic fireball (literally)-explosion and would then hear a large sonic boom. The poor batter hit in the chest would probably hardly feel anything for he would be instantly killed as the baseball would go through him like he wasn't there and explode in the backstop or wall behind him. All this is because the same baseball has acquired 100X100 or 10000 times as much KE as when the high school pitcher threw it.
- 3) Let's now consider a physical object like the Hiawatha asteroid roughly the size (1 kilometer lumpy hamburger of rock) of Partridge Island which descended on Greenland at 10 kilometers/sec hitting first a ground surface covered with a kilometer thick ice sheet. Such a covering would be 3 times as thick as the tallest building in World. My guess is that an external observer let's say on Iceland where he might survive the event would only see a huge flash then feel earthquakes triggered by crustal vibration. The asteroid would expend huge amounts of KE blasting through the ice but it would then still tear away and fling vast amounts of rock ejecta from the crust beneath into the atmosphere and even into outer space. Immense quantities of ice would flash into steam or turned into tsunamis of fresh water melt. The estimates of blast force of this even I have read is 700 megatons of TNT which is 10 times more powerful than the largest hydrogen bomb ever exploded. Today this would be a global calamity of the first order and definitely a short term climate changer.

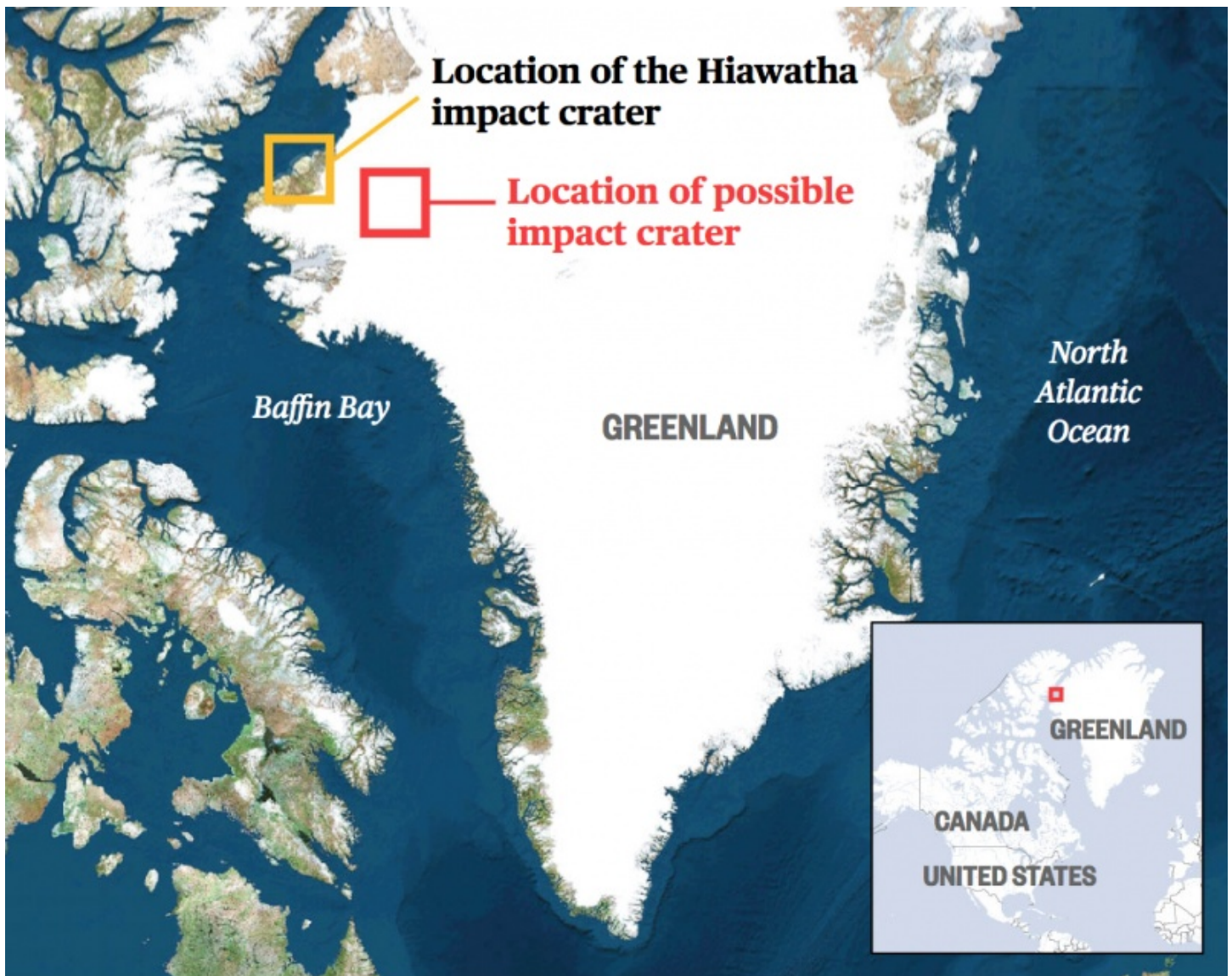
The "official" Confirmation of the existence and nature of the Hiawatha crater was only announced in late 2018 so a lot of research and energy is going to confirm the date of crater creation.

Geologist (Danish) at an open ocean side of the Hiawatha Glacier taking samples showing shocked quartz and other tell tale signs of debris from a colossal impact



Hiawatha Glacier and the Impact Crater Depression Situated in NE Greenland Opposite to Ellesmere Island Canada





Hiawatha Impact Crater Facts and Conjectures:

- It is roughly 30 km in diameter and of course is situated under Hiawatha glacier hence its name and is now number as being one of the thirty largest impact craters ever identified.
- It was hiding in plain site (literally) and satellite imaging and ground penetrating radar revealed its presence.

- It appears to be little eroded by ice and time so it is certainly that it was created in the last 3000000 years when an ice sheets have covered Greenland.
- Samples indicate like the Barringer Meteor Crater in Arizona the Hiawatha impactor was a iron-nickel but much larger.
- It appears to this observer (having viewed crater cross sections) to be a “shallow” crater when viewed to its large size when compared to the Barringer Crater. This could be explained by the impactor having to blast through a coat of ice armour.
- The first big question of course is when was the crater made? This can be only confirmed by a drill program through the Glacier to obtain direct samples. This is a “hot” subject so its my guess that such a program is now in the works and we will see drill samples within several years.
- The second question is this event the one that caused the Younger Dryas mini-ice age that began 12800 years and lasted for almost a 1000 years. A “nuclear winter” caused by a large impactor like the Hiawatha’s together with the discharge of vast amount of fresh water melt from the event into the North Atlantic is believed by some researcher as a very probable cause. A drill dating of the impact event to 13000 +- 200 years to my eyes would seal the deal as to the cause.

Now For a Briefing by Matt West on the Younger Dryas

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