

Theory for the origin of the Deccan Traps

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3/9/2008

Background:

The Deccan Traps were a large volcanic eruption in Western India that occurred ~66 million years ago. The eruption was so severe that there are theories that the ash thrown into the atmosphere was enough to cause an extended winter on Earth, and that this extended winter caused about 75% of the life on Earth to become extinct (called the KT extinction event)

The extinction of the species on Earth at this time is also associated with a large meteor that impacted the Yucatan peninsula, called the Chicxulub impact crater.

Hypothesis

This theory postulates that both natural phenomena are one and the same event. The impact at the Yucatan resulted in mechanical waves that traveled concentrically outward from the impact and converged on the exact opposite side of the Earth, and caused eruption of magma on a large scale in India between Mambai and Mahabaleshwar.

Discussion:

There is now evidence that the impact of a meteor onto a planet can cause damage on the opposite side. Detailed images of Mercury show that a ~1500 KM crater (Caloris basin) has a region of chaotic terrain on the opposite side. http://en.wikipedia.org/wiki/Caloris_Basin

The seismic waves from the impact were concentrated on the opposite side and caused jagged disruption of the terrain at the exact antipodal point. Plus it generated large volcanic flows.

Could the meteor impact on Earth cause the same effect? The coordinates for the center of the crater that occurred is located at -21.2° lat. X 90.5° long. <http://atlas.mapquest.com/maps/map.adp?searchtype=address&formtype=latlong&latlongtype=decimal&latitude=-21.2&longitude=90.5>

This is near the town of Chicxulub today, so the crater is called the Chicxulub crater.

The antipodal point is located at $\text{abs}|-21.2| \text{ lat. X } (90.5-180) = +21.2^\circ \text{ lat. X } 89.5^\circ$.

<http://atlas.mapquest.com/maps/map.adp?The>
[searchtype=address&formtype=latlong&latlongtype=decimal&latitude=21.2&longitude=-89.5](http://atlas.mapquest.com/maps/map.adp?The)
<http://atlas.mapquest.com/maps/map.adp?The>

When this coordinate is viewed, it is on the center of the Indian Ocean between Madagascar and Australia. But, it is known that India has experienced a large velocity of continental drift over the past 70 million years. The estimated location of India ~66 million years ago is shown at:

<http://www.scotese.com/K/t.htm>

This shows the location of India in the same general location. Below is a copy of this map with the antipodal point added. The blue line is the prime meridian, and the blue dot is the antipodal of the Chicxulub impact site shown as a red dot. Notice that the blue dot is very close to the Deccan traps site near the western coast. The distance can be attributed to the inaccuracy of the estimation of the true position of the Indian landmass at this time ~66 million years ago. A slight shift of India's position to the right and downward would line up the Deccan traps with the blue dot.

Conclusion:

The simultaneity of the antipodal point and the time of occurrence of the Chicxulub impact and the Deccan traps eruptions is too coincidental to be unassociated with each other. The seismic waves of the Chicxulub impact caused the Deccan traps massive volcanic eruption by the disruption of the surface and the subsequent magma eruptions. The KT extinction event was directly caused by meteor impact, and indirectly by the Deccan traps volcanic eruption. The two events are essentially the same event in geologic time.

K/T Boundary 66 Ma

