

<p>Rocks that date from ~66 million years ago contain unusually high amounts of the rare element iridium. The levels of iridium contained in the rocks from this time period are roughly 30 times higher than normal levels for Earth. The most likely sources of high levels of iridium are from:</p> <ol style="list-style-type: none"> 1) outer space in the form of cosmic dust from a nearby exploding supernova 2) outer space carried to Earth by an asteroid or meteor 3) eruptions of massive volcanoes 	<p>If a large asteroid hit Earth, it would have been traveling at roughly 62,500 miles per hour at the moment of impact. At this speed there would have been an initial explosion, which would have destroyed everything within 250-300 miles, including the impact object. Trillions of tons of debris (like dust, smoke, and steam) would have been thrown into the atmosphere when the object vaporized, darkening the sky around the globe in just a few weeks.</p>
<p>Evidence of devastating tsunamis dating from ~66 million years ago has been found all around the Gulf of Mexico.</p>	<p>Global darkness caused by debris, dust, soot or volcanic ash would cause a decrease in global temperatures. Plants and algae starved of light would shrivel and die.</p>
<p>A scientist called Alan Hildebrand found evidence of what may be an asteroid impact site in the Yucatan region of Mexico. He called the 110 mile-wide crater Chicxulub. The crater has been dated at 66 million years old. The size of the crater is comparable to that which would have been caused by an asteroid 6 miles wide.</p>	<p>Over several million years around the time of the dinosaur extinction, the climate changed from a warm, mild climate to one that was more varied (sometimes very hot, sometimes very cold).</p>
<p>Rocks that date from ~66 million years ago contain high amounts of soot. The 2 most likely sources of high levels of soot are:</p> <ol style="list-style-type: none"> 1) massive wild fires 2) soot coming out of a volcano 	<p>A series of massive volcanic eruptions would send large clouds of dust and ash into the atmosphere, darkening the sky around the globe as long as the eruptions continued.</p>

<p>The paleontologist Sankar Chatterjee found evidence of a huge ancient crater located under the Arabian Sea off the coast of India. The Shiva crater dates from 65.0 million years ago and is about 370 miles across, and 7.5 miles deep. What created the crater is unknown. If it were made by an asteroid or meteor, the impact object must have been at least 25 miles wide. Other geologists claim the Shiva crater is the result of a sinkhole in the Earth's surface, not an asteroid.</p>	<p>If a large asteroid hit Earth, several events would probably occur:</p> <ol style="list-style-type: none"> 1) Massive wildfires would be started by the shock wave. The fires would release large amounts of CO₂ and ash. 2) The resulting earthquakes would trigger enormous tidal waves (tsunamis) causing extensive damage to coastal areas. 3) The shock wave may start a chain reaction of huge earthquakes and volcanoes.
<p>Rocks that date from ~66 million years ago contain "shocked quartz" crystals that have been metamorphically changed under sudden high heat and pressure. These crystals have only been discovered in 2 places:</p> <ol style="list-style-type: none"> 1) nuclear test sites 2) meteor or asteroid impact craters 	<p>The death of plants on land and algae in the seas would cause bacteria to flourish, dramatically increasing the levels of CO₂ in the atmosphere.</p>
<p>Rocks that date from 65-68 million years ago in southern India are almost entirely igneous (volcanic). Almost 200,000 square miles was covered in lava over a period of 3 million years (an area equivalent to the entire mid-western United States). In some places, the lava beds are a mile deep.</p>	<p>High CO₂ levels would lead to an increase in global temperatures (the greenhouse effect). High CO₂ levels also cause chemical reactions that result in the formation of acid rain. The global warming and acid rains caused by high CO₂ levels would remain for a long time, possibly for a million years or more.</p>
<p>Changes in the organization of the continents due to plate tectonics would cause extensive earthquakes and volcanic activity in areas where continental plates collide.</p>	<p>Major changes in the organization of the continents were occurring around 67-66 million years ago due to plate tectonics. There is evidence that the oceans were receding. For example, a shallow sea once covered what is now the mid-western United States. This sea drained away over several million years, around the time the Colorado Plateau rose.</p>

<p>The fossil record in some places suggests that the non-avian dinosaurs did not disappear suddenly. Rather, non-avian dinosaurs and the other forms of life that went extinct around that time did so gradually over several million years.</p>	<p>The fossil record in some places suggests that non-avian dinosaurs were in decline for 500,000 years before the mass extinction 66 million years ago. In fact, many marine reptiles appeared to have died out several million years before the non-avian dinosaurs did.</p>
<p>The fossil record in some areas suggests that the non-avian dinosaurs disappeared suddenly ("now you see them, now you don't"). Non-avian dinosaurs were present before 66 million years ago and absent after 66 million years ago.</p>	<p>The fossil record in some areas suggests that non-avian dinosaurs were flourishing before the mass extinction 66 million years ago.</p>
<p>While 60-70% of the species alive during the Cretaceous period went extinct around ~66 million years ago, including the non-avian dinosaurs, marine species were affected more than terrestrial species. Nearly 90% of the ocean-living species died during this time period.</p>	<p>Not all organisms were affected by whatever caused the dinosaur extinctions. Some mammals, frogs, salamanders, turtles, lizards, snakes, and other smaller terrestrial creatures were hardly affected. Ferns actually expanded and thrived during this time.</p>