However, in primordial times, the iron present in surface rocks could not have formed into stable ferric oxide because little or no oxygen existed in the atmosphere. Iron exposed to the surface would therefore have been soluble in water. As the rains fell, iron present in surface rocks would have been taken into solution and washed into seas and lakes. The primordial oceans and lakes would therefore have had a major quantity of iron in solution.

What happened to this iron in the waters of the Earth? Remembering that the blue-green algae that lived in these waters were producing oxygen, the answer then is simple -- the iron combined with the oxygen thus produced to form ferric oxide. The ferric oxide precipitated and fell to the bottom to form rusty layers on the ocean floor. As seasonal rainfalls weathered newly exposed volcanic land and swept soluble iron out to sea (or as iron stored in ocean basins welled up into shallow water where the blue-green algae lived), a layer of iron oxide would be precipitated and deposited. As the alternating light layers of chert (silicon dioxide) were being continuously deposited, alternating layers of iron-rich and iron-poor chert were formed. This caused the layered or banded appearance of the BIF rocks.

In addition to the episodic introduction of soluble iron to the shallow seas, the rhythmic banding or lamination of the BIFs could have been produced by episodic growth and production of oxygen-releasing blue-green algae. This would have produced a temporary increase in the oxygen supply for combination with the soluble iron. Both the episodic flowering of blue-green algae and the episodic introduction of soluble iron from the land (or its release from storage in deep ocean basins) may have been responsible for the banded layers produced during the great "Age of Iron Formation."

Geologists believe that the great "Geologic Age of Iron" ended 2 billion years ago because by this time the blue-green algae had finally produced enough oxygen to oxidize all the iron then present at the Earth's surface. Thereafter, new iron exposed at the surface would not go into solution. It would rust (convert to stable ferric oxide) immediately on contact with oxygen in the atmosphere or water. Geologists believe that oxygen thereafter began to accumulate in the atmosphere, and thence to build the ozone screen.

Evidence that free oxygen first appeared as a permanent and accumulating component of the atmosphere 2 billion years ago is also seen in the rocks of the Earth. Anyone who has traveled to Utah, Colorado, and Arizona has been struck by the brilliant red rock formations of the Canyonlands. The brilliant red color is due to iron,