



“All of this gold would have perhaps remained hidden forever if it were not for another incident that took place approximately two-billion years ago.”

A massive asteroid or comet collided with earth, impacting near the town of Vredefort, 120km to the southwest of Johannesburg. This is approximately at the centre of the Witwatersrand Basin. The impact of the space body resulted in the formation of what is known as the Vredefort Dome, which was declared a UNESCO World Heritage Site in 2005.

UNESCO states that the impact created an event of huge significance. *“The Vredefort Dome, approximately 120 kilometres southwest of Johannesburg, is a representative part of a larger meteorite impact structure, or astrobleme. Dating back 2 023-million years, it is the oldest astrobleme found on earth so far. With a radius of 190 kilometres, it is also the largest and the most deeply eroded. Vredefort Dome bears witness to the world’s greatest-known, single energy-release event, which*

caused devastating global change, including, according to some scientists, major evolutionary changes.”¹⁰

The impact caused a series of concentric ridges – among these the Witwatersrand Ridges. Importantly, the once horizontal layers of the Basin were tilted and the gold reefs were positioned for eventual discovery and mining two-billion years later.

The reef discovered by Harrison was one of these tilted conglomerate bands exposed on the surface (an outcrop) at Langlaagte. The conglomerate contained quartz pebbles that were reminiscent of a type of Dutch almond pudding called “banket”, and so the reef acquired its nickname. The “banket” reef was later renamed the Main Reef and its exploitation was joined, in later years, by other payable reefs in the geological succession, among them Leader Reef, South Reef, Vaal Reef, Carbon Leader Reef and Ventersdorp Contact Reef.

Opposite page: The sedimentary layers of the Witwatersrand Basin can be seen in the Walter Sisulu Botanical Gardens in Roodepoort, Johannesburg. This formation is the bottom part of this geological succession which is several kilometres thick. The white layers are Orange Grove quartzite and the darker rock is Parktown shale. **Photo by:** F Malan