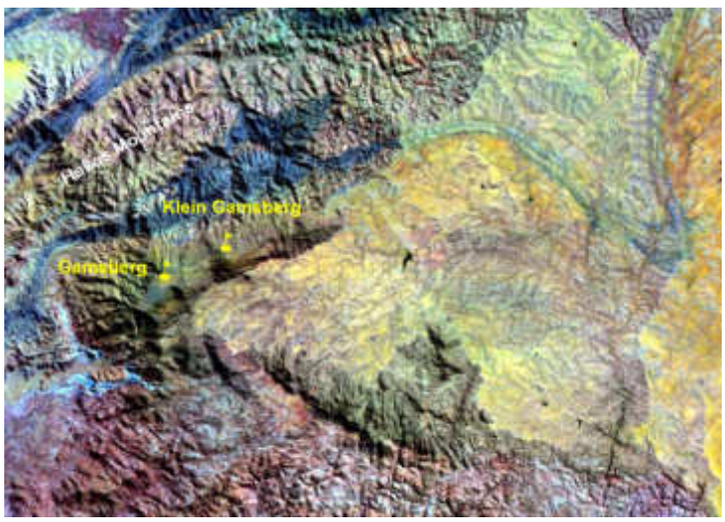
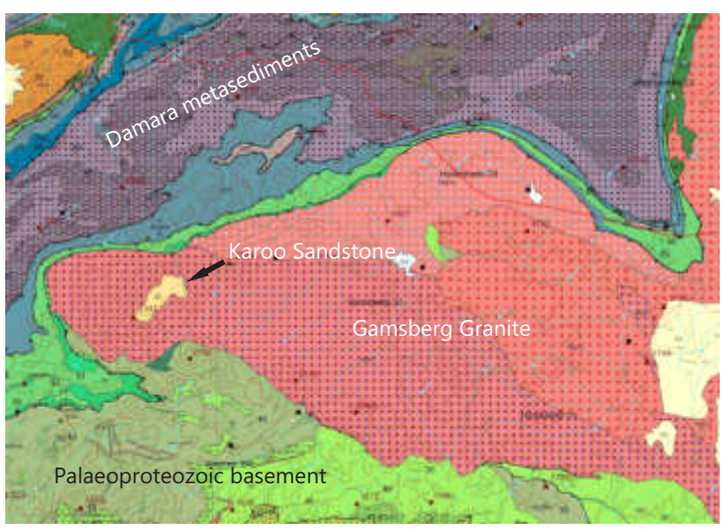
With an elevation of 2347 m above sea level, the flat-topped Gamsberg is part of the Great Escarpment that separates the Khomas Highland to the east from the low-lying Namib Desert to the west. Situated 120 km southwest of Windhoek just south of the Gamsberg Pass, it towers some 450 m above the plateau, whereas the drop to the Namib plains is an impressive 1100 m. Due to its height and distinct shape, Gamsberg is the most prominent landmark in the area and visible from a distance of more than 100 km. A prodigiously winding track leading to the top affords spectacular views of the Namib and the Hakos Mountains to the north. The arid climate, with a large number of cloudless nights, a dark sky undisturbed by artificial light, excellent atmospheric transparency and low humidity led to a small astrono-mical observatory being established on top of Gamsberg by the Max-Planck Institute in 1970.

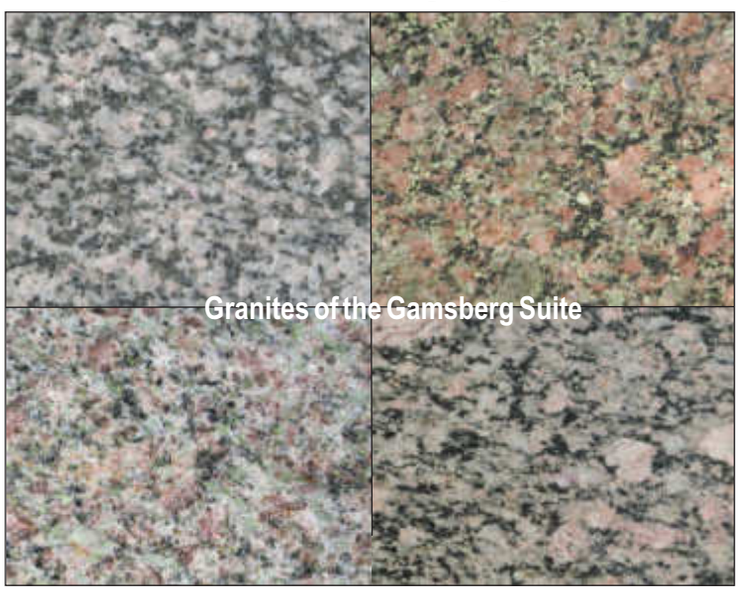


Satellite image (above) and geological map (below) of Gamsberg, Klein Gamsberg and surroundings



View of Gamsberg and Klein Gamsberg from the north

Gamsberg and its smaller neighbour Klein Gamsberg (2326 m) consist almost entirely of granite, which intruded Palaeoproterozoic (> 1.6 billion years) sedimentary and intrusive rocks some 1.1 billion years ago. Between 700 and 600 million years it was deeply buried by terrestrial and marine sediments, which during the subsequent Damara Orogeny (540 m.y. ago), caused by continental collision between the Congo and Kalahari Cratons, were deformed into an imposing fold belt.



During the following 250 million years, erosion completely removed the overlying Damara sediments, and exhumed the Gamsberg granite, giving it a flat erosive top. During the onset of Karoo times, some 300 million years ago, it presumably formed an island, as no rocks of this period are found. Deposition only resumed ca. 180 million years ago, when the shallow Karoo sea had given way to a vast desert covering all of southern Africa, and aeolian sands were laid down on top of the Gamsberg Granite. Today these silicified sand dunes form a 30 m thick layer of hard, whitish fine-grained sandstone, which has protected the underlying granite from erosion during various stages of continental uplift, and thus led to the formation of Gamsberg and Klein Gamsberg.

Granites of the Gamsberg Suite are widespread between Rehoboth, Solitaire und Maltahöhe. But while they belong to the same magmatic event, the various intrusions show marked differences in texture, geochemical and mineral composition; some of the more attractive varieties have been used as dimension stones.