

60 million years ago Europe and North America began to drift apart; forming the Atlantic Ocean. Explore the world-class geological record of this period along Kildonan's shore.

Walk 6

Kildonan

Distance : 4 km / 2.5 miles

Approximate time: 2 hours

Start: Kildonan Village Hall

Terrain: On road, path and along shore. Rocks may be very slippery.

Route description: Follow the road west and on to an unpaved track, following coastal way. Key points are marked by Geopark marker posts. Return by the same route.

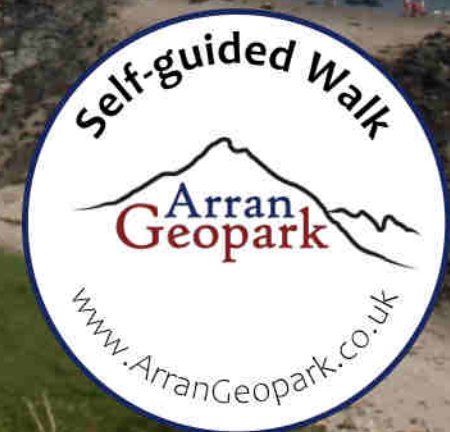
Other notes: it is best to visit at low tide. Please do not disturb seals or nesting birds.

For information on our interpretation centres, guided walks and other events please visit:

www.ArranGeopark.co.uk

Arran Geopark is a project of the Arran Access Trust

Scottish Charity number SC029027.



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Kildonan shore

The southern coast of Arran exposes one of the best examples of a 'dyke swarm' in the world! These walls of black igneous rock were formed when basaltic magma was squeezed up through cracks in the Earth's crust as the continents of Europe and North America were pulled apart.

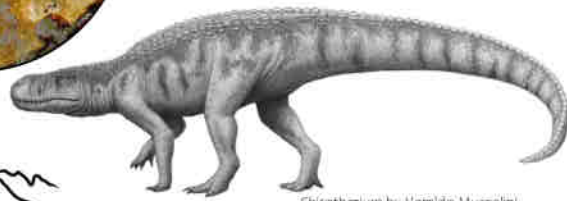


60 million years ago, Europe and North America began to drift apart. The thin crust and cracks that were formed allowed huge amounts of magma to rise to the Earth's surface.

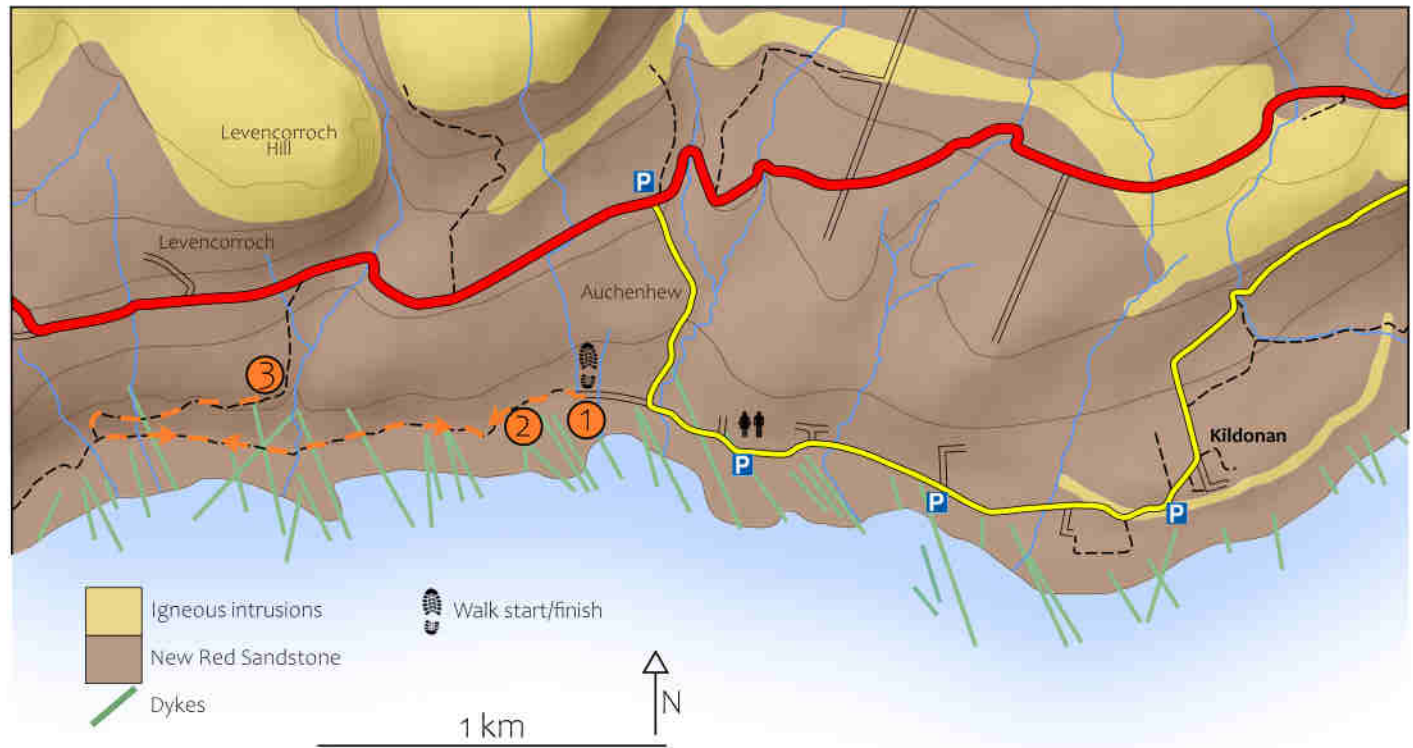
- 1 On the rock platform 50m in front of the car park is a large footprint that is visible at low tide. It was left by a giant reptile that roamed Arran around 240 million years ago. Its name *Chirotherium* means 'hand-beast', because the tracks look like giant human hand prints. Can you find it?



This footprint was left by a giant reptile that was related to early crocodiles. It lived at the same time as the first dinosaurs.



Chirotherium by Heraldio Mussolini



The island of Pladda is made of the same rock as the dykes. It was formed when magma pushed its way through a horizontal (rather than vertical) crack in the Earth's crust.



- 2 The coastline all along this walk is dominated by dykes of black basalt that extend out into the sea. They were formed as the magma that was squeezed through cracks in the Earth cooled and solidified.

Have a close look at the basalt in the dykes. You might be able to see small crystals that were carried by the magma. Also look for small holes, especially in the middle of each dyke. These were gas bubbles that formed within the magma, and were preserved as the magma solidified.

- 3 From here you get a good overview of the dyke swarm, as well as views south to the islands of Pladda and Ailsa Craig. These are also made of igneous rocks from around 60 million years ago – Pladda is made up of a basalt, like the dykes, and Ailsa Craig is made of micro-granite, used in the manufacture of curling stones.

Each one of the dykes represents a crack formed as the crust was stretched. The total thickness of all the dykes at Kildonan shows exactly how much the crust was stretched during continental rifting.



The magma that was squeezed between the cracks may have reached the surface and created 'fissure eruptions' like this one in Iceland in 2014-2015.

Einar Gudmann