



**Down to Earth**

*"Earth science learning for all"*

# **Grand geological tour of Scotland**

## **May 19 - 30 2024 (11 nights)**



**Loch Assynt, Northwest Highlands. The Inchnadamph Hotel is just out of view. (Photo: Chris Darmon)**

### **Some words of introduction...**

I'm delighted that you have invited Colin and I to guide you around some of the finest and most varied geology in the whole of the United Kingdom. We've both been studying the rocks and scenery of these parts for many years and have shared their splendour with many hundreds of people.

I studied geology at the University of Hull and then went on to do a post graduate teaching certificate at Keele University. I spent 8 happy years teaching pre-university students in Sheffield before founding Geo Supplies in 1984. For 25 years I taught adults at the University of Sheffield and today teach around 50 people a week face-to-face and a similar number via our online courses.

Throughout most of my adult life I've been leading field parties around the UK and overseas and in a typical year spend around 12 weeks in the field. I'm very familiar with the field sites we will be visiting, but never stop learning! I believe strongly in letting you, the learners, 'read the rocks' for yourself in the first instance, encouraging you to formulate your own theories. In this way we all learn from each other and everyone understands far better. I'm proud of the fact that in 2004, I was awarded the R H Worth prize by the Geological Society of London for communicating geology to the public at large.

On this trip, I will be accompanied by my friend and colleague Colin Schofield who is a geology/geography graduate. Colin will help me at the field locations and is also very familiar with the sites that we will be visiting. He has a particular interest in geomorphology and will therefore concentrate on the interpretation of the landscape and the quite recent glacial landforms and deposits.

Aside from the geology and landscape I believe that everyone deserves good food and accommodation. Some of the finest geology is situated in the most remote countryside of Scotland, far away from towns. Hotels are few and far between, and are often quite small and family owned. I have secured the use of excellent establishments where I know that you will be both comfortable and well fed. They will give you a true 'taste of Scotland'! Finally, no field trip to Scotland would be complete without some exposure to Scottish traditions and a some non-geological, history and culture. Watch out for a few little 'extras' in the programme that will add to your interest and enjoyment!

We're both looking forward greatly to leading you to some of our favourite places. We look forward to welcoming you to Scotland in 2024, and before that we hope to be able to chat with you on Zoom.

Kind regards

**Chris Darmon**  
**Colin Schofield**  
**Joint Field Trip Organisers/Leaders**

**[downtoearth@geosupplies.co.uk](mailto:downtoearth@geosupplies.co.uk)**

## Getting to Scotland

The best airport for you to arrive at would be Glasgow, as this is no more than 30 miles from our first hotel. Other possible airports are Edinburgh or Manchester would also be a good airport as this has its own railway station with direct trains to Glasgow. A typical cost of the train would be £20-£30 one way. Flights into London would mean a long and expensive train journey to Glasgow. If you want to arrive early, or wish to stay on beyond the end of the formal trip and want me to arrange any accommodation for you, just let me know. I can also offer advice on train journeys and fares that can save you a lot of money.

## Getting around on the trip

We have engaged the services of a Scottish coach company who are very experienced at running both coaches and buses around the Highlands. They will provide us with a resident driver and coach that will be with us to Dunbar.

## Walking on the trip

Everything should be within the capabilities of all of the party. We will always try to get as close as possible to the sites, but this will still mean that there are some walks of a couple of miles, to see the best exposures. There may also be some short sections of steep cliff ascents and descents. However, if at any time you wish to 'opt out' that will be fully accepted and understood. In view of the uncertainties of the weather you are strongly advised to bring all waterproofs and walking boots – particularly as you will be walking over rough ground.

## Why Scotland?

How do I describe the geology of Scotland in a few short sentences? Broadly speaking, we will be examining the rocks in a number of very different areas, that may be summarised as follows:-

### NW Highlands

This is best described as one of the finest places in Europe to examine Precambrian and Lower Palaeozoic rocks in an orogenic belt, the heart of which passes through Assynt, one of our chosen bases. It was here in the early years of 20th. century that two amazing geologists, Peach and Horne recognised the existence of massive tracts of country rocks piled up in a series of thrust slices, which can be seen striding across the almost barren landscape.



In just a few days you'll be able to examine 3 Ga Lewisian Gneisses from the Sourian and Laxfordian, showing repeated metamorphism and exhibiting superb cross cutting relationships. Overlying the Lewisian are the massive sandstone formations of the Torridonian that form many of the fine mountain peaks. This is, in turn, overlain by a fossiliferous Cambro-Ordovician sequence of shallow water sediments including limestone and sandstone. Into all of this comes the Moine Schists courtesy of several major thrust planes. Finally, to cap it all off, we have some excellent glacial scenery with evidence for the existence of humans at least 35,000 years ago. In a word - wow!

### The Moine Rocks

This thick supergroup of metasediments date from the Neoproterozoic and comprise a series of high grade metamorphics that may form an exotic terrane. We will examine them in the Kyle of Lochalsh area.

### The Central Highlands

This large area between the Great Glen Fault and the Highland Boundary Fault is occupied by the rocks of the Dalradian supergroup which comprises a wide range of metasedimentary rocks of varying grade from slates to gneisses. They were examined by the pioneer geologist George Barrow in the 1890s and it was these rocks that inspired the Barrovian index minerals. We will see these rocks as we travel up beside Loch Lomond and will be able to examine them in a prograde sequence.

### The Midland Valley

South of the Highland Boundary Fault lie rocks of the Devonian and Carboniferous. Whilst most of these are sediments there are also significant intrusions of Dolerite (mainly sills) and also within the city of Edinburgh a significant Upper Carboniferous volcano called Arthur's Seat.

### Siccar Point the 'holy grail' of geological time

This lonely coastal site, some 35 miles from Edinburgh was first visited by the 'father of modern geology' James Hutton, in 1788 and it was here that he discovered deep geological time. We will be able to share what Hutton saw and peer 'into the abyss of time'.

#### Siccar Point

One of Hutton's companion, John Playfair wrote of Siccar Point: "On landing at this point, we found that we actually trode on the primeval rock, which forms alternately the base and the summit of the present land. It is here a micaceous schistus, in beds nearly vertical, highly indurated, and stretching



from south-east to north-west. The surface of this rock runs with a moderate ascent from the level of low-water, at which we landed, nearly to that of high-water; where the schistus has a thin covering of red horizontal sandstone laid over it; and this sandstone, at the distance of a few yards farther back, rises into a very high perpendicular cliff."

"On us who saw these phenomenon for the first time the impression will not easily be forgotten... We felt necessarily carried back to a time when the schistus on which we stood was yet at the bottom of the sea, and when the sandstone before us was only beginning to be deposited, in the shape of sand or mud, from the waters of the supercontinent ocean... The mind seemed to grow giddy by looking so far into the abyss of time; and whilst we listened with earnestness and admiration to the philosopher who was now unfolding to us the order and series of these wonderful events, we became sensible how much further reason may sometimes go than imagination may venture to follow."

### **Mesozoic sediments & Tertiary igneous rocks of Mull & Ardnamurchan**

Dominating the large island of Mull are the mountains that form part of the 60 million year old North Atlantic igneous province that dates from the splitting of the North Atlantic. There are gabbros and granites that intrude Lower Palaeozoic and Mesozoic sediments, some of which are fossiliferous.

Mull and Ardnamurchan on the adjacent mainland, provides us with an insight into some of the rocks that can be found around the shores of the UK, some of which are the basis of our offshore oil and gas industry. We will spend two days exploring something of the rocks and scenery of the area taking in the rich variety that is to be found. This will include a visit to Iona where there are some really stunning rocks.

#### ***The island of Iona***

### **Itinerary**

*The following is not intended to be prescriptive, but to give you an idea of what we hope to cover during this trip:-*

May 19 Arrival and our first overnight at the Premier Inn, Dumbarton north of Glasgow

May 20 Dumbarton via Loch Lomond with stops to examine Moine rocks of increasing metamorphic grade and then to Oban and the Isle of Mull.

May 21 Tour of Mull, taking in the holy Island of Iona with its ancient (and little understood) metamorphics.

May 22 Trip to Ardnamurchan to see Jurassic sediments and Tertiary intrusives.

May 23 We return to the mainland and travel up to the Northwest Highlands by way of Fort William and Ullapool, several stops en-route.

May 24 The Lewisian gneisses and Torridonian sandstones of the stable foreland around Achmelvich and Lochinver

May 25 Lewisian and Moine rocks of Scourie and Durness, including the 'multi-coloured rock stop' and Smoo Cave.

May 26 A walk to see the Moine Thrust behind our hotel and the amazing Traligill cave. Karst scenery to die for! The classic Moine Thrust section at Knockan Crag.

#### ***The Tobermory Hotel***

May 27 Drive south to Edinburgh, with stops en route to see the Great Glen Fault, Loch Ness. Next three nights in Dunbar.

May 28 We take a short drive to see the classic location of Siccar Point with Hutton's unconformity. We take in other local geology.

May 29 A visit to classic sites in Holyrood Park and Arthur's Seat volcano, followed by a coach tour to see Siccar Point.

May 30 End of tour and departure for airports.



**Arthur's Seat volcano in Edinburgh's Holyrood Park**

## Accommodation & Food

Accommodation has been reserved for us at the hotels detailed below. At the Tobermory Inn and the Inchnadamph Hotel we will probably have sole use of the accommodation. All our hotels normally provide en-suite rooms or private facilities, where this is not the case, you will be informed.

At all our hotels will take a 3-course evening dinner with tea or coffee, chosen from a menu that will include a vegetarian option. Breakfasts are typically full cooked or lighter options, again chosen from a daily menu. In remoter areas we will take a packed lunch with us, but on other occasions there may be a choice of local cafes. If you have any specific dietary requirements, these should be specified on the booking form.

Rooms come in several different configurations and in order to accommodate as many of you as possible we will need to fill the various rooms. A couple of single rooms will be available (at extra cost). Most rooms comprise a double bed or twin beds and a few rooms are described as 'family rooms' and normally comprise a double and single in the same room, thus providing sleeping spaces for three people.

***It would be most helpful if you could specify your room requirement carefully on the booking form. We will do our best to accommodate your requirements as closely as I can, but cannot guarantee it at every hotel.***

## Our Hotels

*At the time of writing this, I am awaiting confirmation of my booking for the first night, but at this stage, we can give you details of our three main hotels:-*

**Tobermory Hotel, 53 Main Street, Tobermory, Isle Of Mull PA75 6NT**  
**Website: <https://thetobermoryhotel.com/>**

**Inchnadamph Hotel, Assynt, Sutherland, IV27 4HN**  
**Website: <https://www.inchnadamphhotel.com>**

**Royal Macintosh Hotel, Station Road, Dunbar, East Lothian, EH42 1JY**  
**Website: <https://www.royalmackintosh.co.uk/>**

## Cost

***For 2 or 3 people sharing a double, twin or triple room, the cost per person will be \$4495 (US) per person. For a single room throughout the trip, the cost will be \$5195 (US). (Max. 3 singles) Single Room SOLD OUT***

## What's included in the cost?

- The services of Chris Darmon and Colin Schofield as tutors, who will be available to you at all reasonable times
- Accommodation and meals as specified here
- The cost of all transport used during the trip - coach and ferries
- Admission to any museum, exhibition etc. as visited by the group

## What's excluded from the cost?

- The cost of travel between your home and the trip area
- Travel insurance
- Lunches where they are not taken as packed lunches from the hotel
- The cost of optional visits
- Incidental expenditure, gratuities and tips

## Books & Maps

There are a number of excellent, recently published, guide books and also some geological maps. These can be purchased from us, either in advance or during the trip.

## Booking

Each person is required to fill in a booking form. Your booking will be confirmed when you have paid a deposit of \$750 and when we have allocated rooms at the hotels. Your deposit should be paid by July 31st. 2023. The balance will be payable no later than January 31st. 2024. Those who book early should be assured of getting the rooms of their choice.

***Details of how to make the payment and submit the booking form will be communicated to you locally.***

The trip will run provided a minimum of 20 people have booked and paid the deposit by July 31st. 2023.

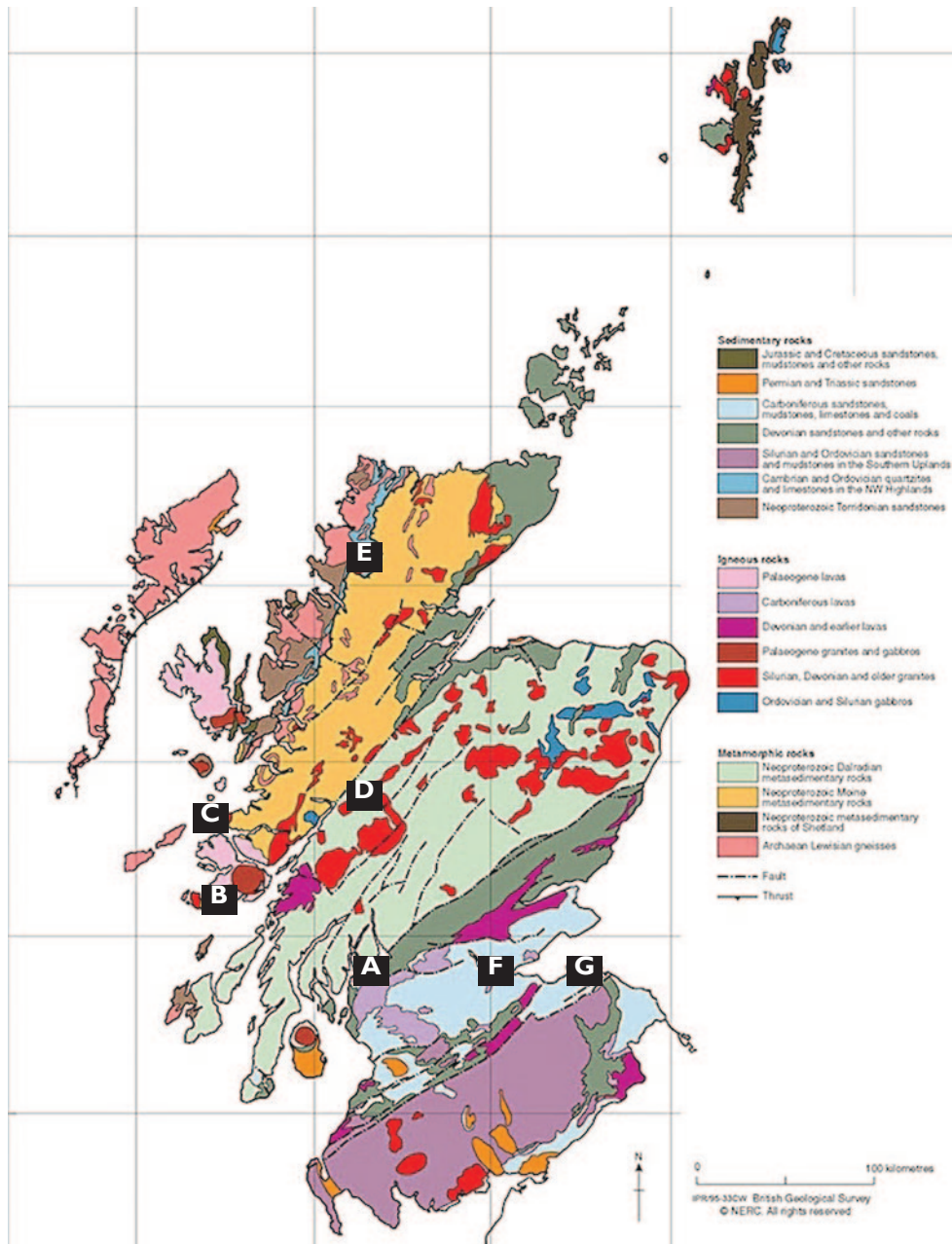
Once the money reaches us here in the UK, it is placed in a special client account that we do not have access to until the completion of the tour. This is to ensure the safety of your money in the unlikely event of failure of Geo Supplies Ltd. This is a requirement of European Union law.

## What happens next?

***As soon as the trip is confirmed, with the minimum number of deposits paid, you will be able to make your travel arrangements.***

**If you have any questions or queries - contact Chris Darmon as follows:-**  
**Email: [downtoearth@geosupplies.co.uk](mailto:downtoearth@geosupplies.co.uk) • Tel: 0044 114 245 5746**

## Where we will be going...



- |          |                             |
|----------|-----------------------------|
| <b>A</b> | <b>Dumbarton</b>            |
| <b>B</b> | <b>Mull</b>                 |
| <b>C</b> | <b>Ardnamurchan</b>         |
| <b>D</b> | <b>Fort William</b>         |
| <b>E</b> | <b>Assynt, NW Highlands</b> |
| <b>F</b> | <b>Edinburgh/Dunbar</b>     |
| <b>G</b> | <b>Siccar Point</b>         |