

Down to Earth exera

Issue 105 Septemer 2021

NEWS FLASH...

- Book a place on a Residential Field Trip in 2021 or 2022!
- Three Autumn Zoom courses to choose from!
- Five virtual Autumn Day Schools!

If you saw the image of Dorset's Durdle Door that has been selected as one of the images for the 'Countryfile Calendar' for 2022, this is the view looking westwards, from roughly the same spot.

In the background is the chalk, whilst in the foreground are the Lower Cretaceous Greensand and Gault. The latter rocks are very thin at the western end of the sedimentary basin. All of the rocks are close to the vertical having been affected by Alpine Earth movements. (Image: Chris Darmon)

From the Editorial team...

One of the announcements made by the Chancellor Rishi Sunak during the Covid pandemic was of particular interest to any business that makes use of technological equipment. For the first time, purchases of things like new computers could be set against any profit made and not only claimed for 100%, but an amazing 130%!

As we now see Zoom meetings as the way forward for our adult learning, with only occasional face-to-face sessions, It made sense to equip Colin, who runs these sessions from his home in Rochdale with something that befits the importance of his role. We're delighted to say that, despite one glitch, the replacement has gone down well and everyone has been able to see that the quality of video and audio is much improved.

Spurred on by our success, we have also gone down the far trickier road of replacing Chris's 10-year old Apple Mac with one that uses the current operating system. We went for a 2020 model as it was $\pounds 1000$ cheaper than a 2021 version! Unfortunately this has involved getting to grips with a new version of Quark, the program we use to design *Down to Earth* and *DtoE extra*.

Naturally, Chris would like a program that corrects all of his spelling mistakes, but alas, that isn't going to happen! Worse still, a lot of the functions he's worked with for years have changed out of all recognition. At the present rate, It's going to take him some time to solve all of the problems, but be assured, things can and will get better! Look on the bright side, this will probably be the last major change.

Chris Darmon & Colin Schofield The Down to Earth editorial team

See pages 6-8 for the full spectrum of our 'real' and virtual events!



Another large earthquake strikes Haiti...

The Caribbean island of Haiti is one of the poorest countries in the World. It has also recently suffered an almost complete collapse of its government and was only slowly getting over the 2010 earthquakes that struck the Port-au-Prince area. Now the same area has been hit by another devastating 'quake that has cost the lives of more than 2000 people and wrought enormous damage.

On 14 August 2021, a magnitude 7.2 earthquake struck the Tiburon Peninsula in SW Haiti. It had a 10-kilometre-deep epicentre near Petit-Trou-de-Nippes, approximately 150 kilometres west of the capital, Port-au-Prince. Tsunami warnings were briefly issued for the Haitian coast. At least 2,207 people were confirmed killed as of 22 August 2021. At least 136,800 buildings were damaged or destroyed. The deadliest earthquake and deadliest natural disaster of 2021, it is the worst disaster to strike Haiti since the 2010 earthquake.

UNICEF estimates more than half a million children were affected. The Haitian Civil Protection General Directorate (DGPC) warned of a possible large humanitarian crisis resulting from the earthquake. USAID provided US\$32 million in foreign aid to Haiti following the devastating earthquake.

Needless to say, it's Haiti's tectonic setting that les behind the most recent and previous earthquakes, including that of 2010. Haiti lies within the complex plate boundary zone between the North American Plate to the north and the Caribbean Plate to the south. This zone is interpreted to contain a number of microplates, particularly the Gonâve Microplate, which is bounded to the north by the Septentrional-Oriente fault zone and to the south by the Walton fault zone and the Enriquillo–Plantain Garden fault zone, all of which are



An idea of some of the destruction to buildings close to the epicentre (Image: Centre for Disaster Philanthropy)

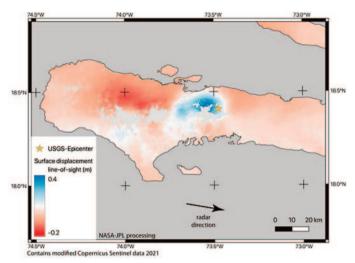
active left lateral transform faults. Although dominated by lateral motion the plate boundary zone also accommodates a component of north-south shortening. This has led to overall transpression along the main strike-slip faults.

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This USGS image gives an idea of the surface displacement caused by the August 14th earthquake.

In the Tiburon Peninsula the main structure is the Enriquillo–Plantain Garden fault zone, which runs along its length. This fault zone carries almost half of the left lateral displacement between the North American and Caribbean plates, with a displacement rate of about 7 mm per year. The epicentre of the 2010 Haiti earthquake was located at the eastern end of the peninsula and was caused by movement on previously unknown thrust faults that form part of the overall fault zone, without rupturing the main strike-slip fault strand. The same fault zone is thought to have been the source of the 1751 and 1770 earthquakes which destroyed the capital Port-au-Prince.

According to the United States Geological Survey, the earthquake occurred as a result of oblique-reverse faulting on the Enriquillo Plantain Garden fault zone 125 km west of the Haitian capital Port-au-Prince, consistent with its location and the observed focal mechanism. It had an estimated epicentral depth of 10.0 km.

In the aftermath of the earthquake, the search and rescue mission was hampered by a tropical storm that hit the same area just a few days later. Aid agencies around the world have stepped in to help with emergency appeals going out for food and medical supplies.

We are grateful to Wikipedia and the USGS for material used in this feature.

Let's hear it for the volunteers who are keeping our nature reserves accessible...

At the beginning of August we took a small group of Down to Earth readers to the Holwell Nature Reserve, near Melton Mowbray in Leicestershire.

Since it was abandoned as a working ironstone pit in the mid-1960s, the reserve has been a great place to see the Marlstone Rock (ironstone) as well as some of the other Lower Jurassic sediments both above and below.

Up until a few years ago it was still possible to carry out a decent graphic log of the main face, but that's no longer possible as vegetation slowly takes over. The county wildlife trust that looks after the site is sympathetic to the needs of the geologists but has to maintain a balance between the rocks the flowering plants and the wildlife, all of which need to flourish. We were lucky enough to have with us John Every-Clayton, who is not only interested in all aspects of this wonderful site, he's also a members of the Naturalists' Trust.



The base of the Marlstone Rock is completely obscured by vegetation in this 'before' shot. (Image: John Every-Clayton)



Now this looks a whole lot better! Just a little more scraping may be required to reveal the wonderful orange colour of the Dyrham Sandstone formation. (Image: John Every-Clayton)

We were disappointed not to be able to see the bottom of the ironstone which had been visible in a small trench in the bottom of the quarry. John promised to seek permission to dig it out again. With permission willingly granted, he set about digging and has made a big improvement. Thanks to John and the Trust for a job well done!

STOP PRESS!

Hampshire Mineral & Fossil Fair, September 3 at Lyndhurst Community Centre

The above show has been CANCELLED we understand, due to what are described as 'operational difficulties'.

For further information, please contact the Southampton Mineral & Fossil Society.

Iceland's Fagradalsfjall volcano as photographed by Alan Clewlow...

As we have previously reported in these pages, the Fagradalsfjall volcano in Iceland has been spewing lava since March, but until now we hadn't been able to bring you an eye witness report from someone we know in the UK.

However *Alan Clewlow* from *Volcanic Experiences* has been and brings us this:

"I've not long returned from a highly successful Volcanic Experiences group tour to Iceland. This followed a personal visit to check out how things were "on the ground" in June, before taking the group there, but also gave me the opportunity to see the eruption and take a few photos, one of which is shown below.



This picture of the Fagradalsfjall eruption was taken by myself on June 8th, from a viewpoint now cut off by lava flows. At the time, the crater was sending out a burst with fountains and flood of lava about every ten minutes, with each one lasting around a minute.



Geopark President visits the latest partner organisation and enjoys a train ride on the SVR!

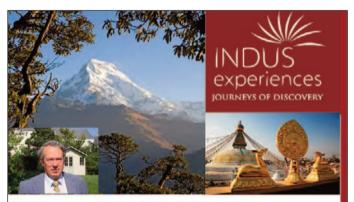
Abberley & Malvern Hills Geopark President and *DtoE* Editor, Chris Darmon paid a visit in mid-August to support the annual GeoFest programme of family events..

Chris was delighted to be able to meet up with Helena Chisholm, manager of the Arley Arboretum, the geopark's latest partner. It's hoped to be able to establish a geotrail at this popular tourist attraction which is sited on one of the River Savara's famous tarraces



sited on one of the River *Chris & Helena at the Arboretum* Severn's famous terraces. *(Image: Cherry Oliver)*

Later in the visit Chris enjoyed a trip from Bewdley to Kidderminster on the Severn Valley railway another partner organisation who are keen to develop their links with the geopark. They are currently working on a project with the National Lottery concerned with one of the major viaducts along the route. We, in the geopark, for our part, were keen to help them with information about the source of the building stone and bricks that were used. It was good to see people in a number of attractions busy and moving towards being fully open.



Indus Experiences is pleased to announce special interest (geology) tours to a range of destinations. Dr Danny Clark-Lowes will be your tour leader on many of these. He is a geologist, educated at Cambridge and London universities, and a mountaineer, much travelled in the Himalaya. Tour destinations include Annapurna region in Nepal, Bhutan, Ladakh and Zanskar (northern India), Rajasthan, Kyrgyzstan, Oman, Jordan and Morocco.

> For detailed day to day itineraries visit: www.indusexperiences.co.uk/special-interest On 'Special Interest' tab scroll down to 'Geology'

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Our 10% discount on most BGS maps event continues throughout September*...

We have been so pleased with the success of our BGS map discount scheme, that we've decided to carry it on until the end of September, but it must end soon! Call into our shop; in person and you'll get a 10% discount on any of our large stock of BGS maps! This includes all of the 1:50 000 and 1:25 000 series for the UK. (* The only items not included in the deal are combined book and map packs, or any item that's already discounted.)

We are currently seeing a number of Open University students, undergraduates who are either going to University for the first time or else looking forward to returning. Everyone is welcome and you will never pay more than you would on our website - and frequently make a significant saving!

Our current opening hours are 8.30 - 4.00, Monday to Friday and 9.30 - 1.00 on Saturdays.

Remember that you can also access our full online shop by going to: www.geosupplies.co.uk and enter our online store.

Shortages are kicking in...

We are now seeing some significant stock shortages, especially of overseas sourced products and even a few rocks.

Estwing hammers from the USA are months behind with their deliveries to the UK market. Whilst we still have a few hammers for personal purchase our bulk university customers are having to wait for new supplies to arrive.

We are also seeing some shortages in the supply of certain models of compass-clinometers. Luckily, customers can usually find a suitable alternative if their first choice isn't available.

Price rises are around the corner...

So far we've managed to get by without significant price rises, but be warned, they will most surely follow in the near future. Once again

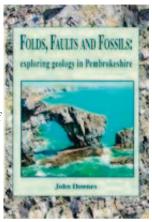
it's being driven by external factors such as the cost of raw materials, shipping and even import duties.

So if you are looking to make any significant purchase in the near future, the best advice has to be to get it now, while you still can! That includes Christmas presents.

Folds, faults & fossils (Pembrokeshire guide) is now out of print...

"Folds, Faults & Fossils" by John Downes, was first published in 2011 and over the intervening ten years has sold well. It must have been used by several thousand visitors to Pembrokeshire as their trusted guide to the geology and landscape of this area.

Sadly, this has now gone out of print. If you want to get your hands on a copy, the best advice has to be to look for books shops in the local South Wales area, or see if you can get hold of a secondhand copy.



Down to Earth readers welcome! Just 5 minutes off M1 Jn 35 N. Sheffield



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If you've enjoyed reading this Down to Earth extra, you'll love our quarterly Down to Earth! It's a 32-page quality magazine in full colour that's packed with up to the minute geological news and articles. You can get your hands on this either in print or electronic formats.

You can subscribe now for the remainder of 2021 and 2022 for just £16.00 for printed copies or £10.00 for it as pdf files, direct to your email. To subscribe, go to: www.geosupplies.co.uk or ring us on 0114 245 5746.

Down to Earth is published quarterly. Take out an e-subscription now for 2021/2 for just £10.00 anywhere in the world, or £16.00 for printed copies in the UK. We'll send you the next 5 issues, to the end of 2022 and 4 back issues. Additionally, all subscribers will get DtoE extra FREE each month. If you'd like back issues of printed copies, you can get a parcel of these for just £15.00 extra.

HOW TO SUBSCRIBE - Go online at: www.geosupplies.co.uk • Tel. 0114 245 5746 and quote any major card • or send a cheque (payable to Geo Supplies Ltd.) to: 49 Station Road, Chapeltown, Sheffield S35 2XE Extra September



We've now finalised the 2022 programme of residential trips

This is the amazing Fingal's Cave on the Isle of Staffa, off the west coast of the Isle of Mull. It is composed of continental basalt that originated in Greenland. (Image: Chris Darmon)

We have very few remaining places on our Autumn trips - check with us for the latest situation. For early 2022 we have decided to delay our planned trips to Fuerteventura and Norway to 2023 and have now booked a fully UK and Ireland programme in the hope that everything will be able to run.

We've added North Cornwall and The Isle of Mull to the first half of the year and Minehead, Berwick on Tweed and the Yorkshire Coast to the second half.

We sincerely, hope that we can run everything that we've planned for 2022. As always, you can book with confidence that you will never lose out financially.

To view a brochure, go to our to website at: www.geosupplies.co.uk or Tel: 0114 245 5746 Booking forms are <u>only</u> available direct from us. Email: downtoearth@geosupplies.co.uk

The 2021/2 programme

- the full list

- Forest of Dean September 13-17
- South Devon Geopark October 9-16

2022

- North Cornwall April 2-9
- Raasay & Skye April 21-28
- Northwest Highlands April 29-May 6
- Dingle Peninsula May 18-25
- Mull & Ardnamurchan June 4-11
- Pembrokeshire June 25-July 2
- Northeast Scotland July 20-27
- Worcester Summer School August 13-20
- Berwick & the Borders September I-8
- Minehead, Somerset September 14-21
- Malvern Hills September 28-October 2
- Yorkshire Coast October 10-15

Full refund, if we, or you, have to cancel due to Covid-19. Everyone booking will be required to have completed a Covid-19 vaccination programme in good time and to be 'fit to travel'.

Enrol online at www.geosupplies.co.uk or ring us on 0114 245 5746 Geo Supplies Ltd 49 Station Road, Chapeltown, Sheffield S35 2XE



If you haven't joined one of our residential field trips before, what can you expect?

- Our residential field trips are suitable for adults of all levels of interest and geological knowledge.
- Our trips are friendly and informal and mainly comprise 15-20 people. Overseas trips are usually larger.
- We usually use comfortable small hotels and guest houses and all meals are included.
- You have the services of Chris Darmon and Colin Schofield as field leaders. Both are highly experienced and knowledgeable field geologists.
- During the current period, even if we have a minibus you will be able to use your own car if you wish.
- Dates shown in this listing are the start and finish dates.

If you still have any questions or queries, don't hesitate to email us at: downtoearth@geosupplies.co.uk or tel: 0114 245 5746

The 2022 Residential Trip programme...

Remember that some of these trips have been advertised previously and are therefore already nearly full. If you are looking for a single room, these will be in short supply on most trips. The message is to book early to avoid disappointment!

NEW! North Cornwall, April 2-9

This trip, which is based at the Cliff Hotel in Bude, takes in the varied geology and fabulous scenery of North Cornwall. Rocks of Devonian and Carboniferous age have been superbly folded and faulted in the Variscan Orogeny. We'll be taking in places such as the Delabole Slate Quarry, Tintagel and the amazing cliffs of Hartland Quay. Add in some of the granite around the north of Dartmoor and we have a great trip in store for you.

Raasay & Skye April 21-28

The island of Raasay is situated just off Skye and is a geologists' paradise with rocks ranging from the Lewisian to the Tertiary. We also spend two full days on Skye in what will be a memorable trip.

Northwest Highlands of Scotland April 29-May 6

Based at the famous Inchnadamph Hotel in Assynt, this trip takes in some of the UK's finest geological sites in the Moine Thrust and other classic places. We journey to the 'multi-coloured rock stop', Smoo Cave and beautiful Achmelvich on the coast. See our oldest rocks and get to grips with the processes that made rocks 3 billion years ago.

Dingle Peninsula, Ireland May 18-25

The west coast of Ireland is amongst the most beautiful in the whole of the British Isles and we want to share it with you! See amazing folds in the rocks of the Lower Palaeozoic and also a great variety of different rocks, minerals and fossils.

NEW! Mull & Ardnamurchan June 4-11

This trip is based in the beautiful Mull village of Tobermory. We will spend much of the week studying the rocks of Mull, including taking in a trip to the island of Staffa (weather permitting). We'll also spend two full days on the Ardnamurchan Peninsula where we will be able to see Jurassic sediments with fossils, along with excellent igneous rocks from the Tertiary. Back on Mull we'll also take in the rocks of Iona and places like Calgary and Dervaig. This promises to be a great trip,.

Pembrokeshire June 25-July2

We've been trying to return to this, one of our favourite areas, for two years! This trip is based in the small village of Johnstone, near Haverfordwest. From there, we'll explore many of the best places in the county, including Marloes, St Davids and Saundersfoot. This is Palaeozoic geology at its best, all folded and faulted in the Variscan Orogeny.

NEW! Northeast Scotland July 20-27

This trip examines the coastline of Moray and Nairn, along with some of the inland outcrops. It's known to geologists as the 'kingdom of Dalradia' because its dominated by the metamorphic rocks of the Dalradian formation. That said, we'll also see sediments from the Old and New Red Sandstones and even a little Jurassic. Come and explore an area of Scotland that lies between Inverness and Peterhead, we promise that you will not be disappointed!

University of Worcester Summer School August 13-20

Our annual summers school is beginning to feel a bit like the Tokyo Olympics! We first tried to do it 2020 and then the University could not accommodate us this year, so we've gone for 2022! We are sure that it will have been worth the wait as we bring you a varied programme of field visits across the Midlands and Welsh Borders.

NEW! Berwick & the Borders September 1-8

This trip includes a visit to the 'holy grail of geological time' at Siccar Point and lots of other amazing places. From our base at the comfortable Castle Hotel, we'll be taking in both coastal and inland locations from Northumberland and Berwickshire. Marvel at folded Carboniferous sediments at Scremerston, the granite scenery of Cheviot and volcanics at St Abbs. In short, there's something for everyone on this week.

NEW! Minehead, Somerset September 14-21

The coast of North Somerset is the 'other' Jurassic Coast with similar geology to that of Dorset, but without the crowds! We'll be taking in the Devonian rocks of Lynmouth and the landscape of the Exmoor National Park. Weather permitting, we'll also take a day trip to the fabulous Island of Lundy in the Bristol Channel where you can examine a Tertiary granite.

NEW! Malvern Hills September 28-October 2

Great Malvern is world famous for its spring water that flows from fissures in the Precambrian rock of the hills made famous by Elgar. Aside from these ancient igneous rocks there are also nearby exposures of Lower Palaeozoic limestones along with sediments from the Carboniferous and Permo-Trias. We'll also be including a trip along the Severn Valley railway to view Coal Measures and dunes.

NEW! The Yorkshire Coast October 10-15

This trip is based at the small North Yorkshire village of Hunmanby, just of the south of Filey. From our comfortable guest house base, we'll get to see Jurassic and Cretaceous rocks from Scarborough down to Flamborough as well as taking in the fine Quaternary cliffs of Holderness and the unique inland scenery that is the Yorkshire Wolds. A great way to round off the 2022 field season!

Contact us now: downtoearth@geosupplies.co.uk for your brochure and booking form. You can also ring us on: 0114 245 5746 to secure the trips of your choice.

When the nights begin to draw in and the temperatures drop - welcome to our virtual world!

We've got some exciting plans for the Autumn and Winter as we begin a new season of Zoom sessions. Remember that you can join us in our weekly Zoom sessions at the alloted times, or you can choose to have printed background papers and access the audio at a time to suit yourself.

Expect our usual informal approach and style that welcomes each and every one of you!

More detailed information for each of the Zoom courses is now available on our website, or direct from us.

To enrol onto the course, or to find out more, go to our website, and enter the online shop: www.geosupplies.co.uk or ring us on 0114 245 5746

If you have any questions email: downtoearth@geosupplies.co.uk

Autumn Zoom Courses

These courses begin the week commencing October 18 and run for the number of weeks shown.

Time Travellers Coastal Britain (10-weeks)

This course takes a look at the geology and landscape of some of our favourite stretches of coastline. It includes the following: North Cornwall, Berwickshire and Northumberland, Tyneside, Orkney, Mull and Ardnamurchan, North Somerset, Moray and Nairn, the Gower, Suffolk and Country Antrim. These are all new locations, not previously covered in the Time Travellers series.

Cost: Ten hour-long Zoom sessions with electronic background papers ± 50.00 for one person or ± 70.00 for 2-people studying together. Printed background papers cost an additional ± 20.00 . Zoom sessions on Mondays at 2.00 and 7.00 pm (you choose)

The Ice Ages (7-weeks)

This brand new course has been developed by our colleague Eileen Fraser from materials she has presented to her local U3A group. The Ice Ages of the Quaternary began just over 2 million year ago in the UK and we are still in the period. This course will examine the theories behind how the Earth's climate has swung regularly from warm to cold and back again many times throughout the geological record. It will look at how we gather evidence for climate change and the features that are left behind in the landscape. With COP 26 meeting in Glasgow during the course, you really can't get more relevant than this!

Cost: Seven hour-long Zoom sessions with electronic background papers £35.00 for one person or £50.00 for 2-people studying together. Printed background papers cost an additional £20.00. Zoom sessions on Tuesdays at 2pm or Thursdays at 7.00 pm (you choose)

Sedimentary Rocks - one very wet, dry, windy, cold day! (10-weeks)

This course has previously been offered as a basic distance learning course only. Now we are able to bring it to you with fortnightly Zoom tutorial sessions. The course is arranged in a way that covers all the

main groups of sedimentary rocks according to the environments in which they were deposited. It also covers how sedimentary rocks are formed and the structures that they produce.

Cost: Five hour-long Zoom sessions with electronic course units and tasks £40.00 for one person or £60.00 for 2-people studying together. Printed background papers cost an additional £25.00. Zoom sessions on alternate Wednesdays at 7 pm

Virtual Day Schools

Our popular Day School format, transcribed into a virtual format, with some lively topics for you to enjoy! You can choose individual day schools at £20.00 each or take all five sessions for £85.00, a saving of £15.00. Printed background papers cost an additional £5.00 per day school. Day schools begin at 10.30 and involve three Zoom sessions of about 45 minutes each with time for you to carry out your own guided study in between.

October 20 Granites of the UK

Granites are found on Britain's most northerly beach at Skaw in Shetland and also form the cliffs at Land End in Cornwall. They underlie much of Northern England at depth, often only known from geophysical surveys. During this day school we explore how they came to be emplaced, the minerals they contain and even what we use them for.

November 3 Geological Maps

Geologists have been making and using geological maps for more than 200 years. Despite all sorts of technical advances, the paper map remains one of the most useful resources that we have for understanding the geology or our country or our local area. During this day school we'll be getting you to take a look at an area of the UK of your choice through a map. We'll show you how to read it and get the most out of the information that it contains.

November 17 Volcanoes

Volcanoes make for excellent TV! There's nothing quite like a fiery eruption to relieve people from endless coverage of Covid-19. During the course of this day school we'll be examining the full range of different volcanoes around the world and establishing where they form and why. You will discover that they are the 'safety valves' of planet Earth.

December 1 Iceland - land of ice & fire

Iceland may only be around 15 million years old, but it's a place where lots of geology happens on a daily basis. From earthquakes to volcanic eruptions and glaciers to cold deserts - Iceland has the lot! Discover some very new ideas about why all this happened.

December 15 Christmas crackers!

In this, our final day school, we'll be examining some of the wackier ideas that have been put forward over the years to explain geological phenomena. Some may even still be believed by Donald Trump!





In each issue we are pleased to be able to introduce you to a range of featured books. Where they are being offered at reduced prices, these will be current to the end of September 2021 provided that stocks are available. Please note, all prices include UK postage.



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