



**The newsletter of Malvern U3A Geology Group
July 2017**

The leader

Obviously, we are into a relatively quiet period for the group at the moment. With no monthly indoor meetings, our only contact together is during the various outdoor trips and that only involves a relatively small number of members. This is compared to the magnificent attendances at this year's indoor monthly meetings which averaged 89 attendees! Never the less the programme continues – see calendar at the end if in doubt!

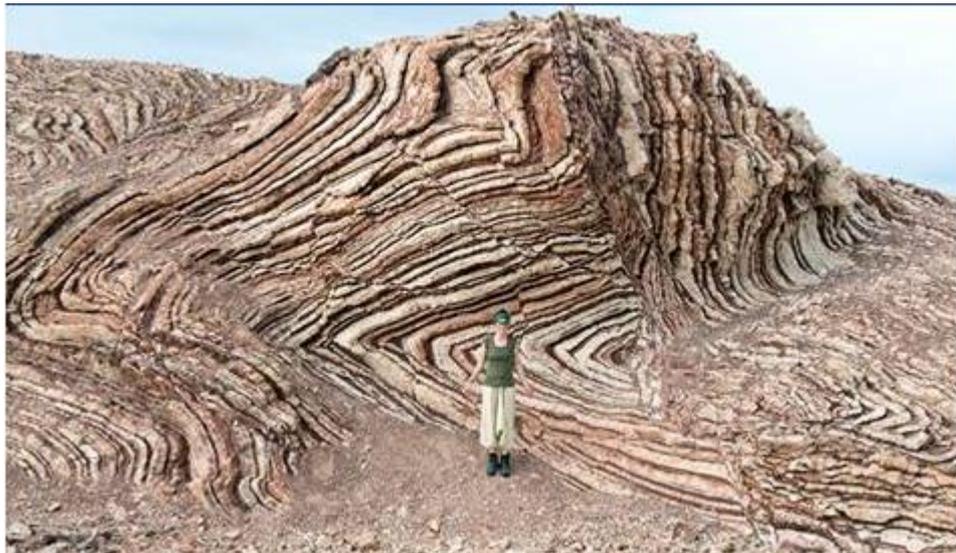
Since the last newsletter, a number of us were lucky enough to go on the local field trip organised by Alan Hughes and led by David Bullard, 'the man who wrote the (only) book on the geology of the Malvern Hills'! This was an excellent trip by a man who really knows the hills and who we are lucky enough to have come to talk to us in December. I can assure you that this will be a treat. Many thanks, of course, to Alan for all his efforts not only in organising the trip but also in establishing contact with David, who is keen to help us in other ways too.

As you all know, we are still in the process of investigating whether we should move from the Cube or not. We recently put a case to the U3A for money to be spent on improving the audio/visual system there, which is our major concern with the venue, but unfortunately the Malvern U3A constitution does not allow money to be spent on shared facilities. However, they have suggested a number of ways that things might be improved. The Steering Committee has reviewed these options and is meeting shortly to make a final decision. We will let you know the outcome very soon.

As I write this, I am poised to go on the trip to the BGS Open Day tomorrow. It looks like a very interesting programme and I'll report back on it in the next newsletter.

The next field trip is a visit to Bromsgrove on 26th July to study the geology of that area. There are still some places on this trip, so if you are interested in going please see the calling notice attached to this email. Richard Newton is the contact - richard@renewton.plus.com.

And what, might you suppose, is going on here?



Well clearly some very complex folding and a bit of faulting thrown in for good measure. The whole area is known as the Batain Melange in Oman. It is not a well researched area, but it does have an ophiolite sequence not too far distant, so plate tectonics is probably in the mix somewhere. If you want to know how complex it seems to be then follow the link:

<https://www.researchgate.net/publication/249548805> The Batain Melange of NE Oman

Now here is another one to ponder, but it is a bit different



This is White Pocket in the Vermillion Cliffs National Monument in Arizona. Not the easiest of areas to visit, but it certainly seems worth the effort. Here is a photograph of a nearby area. Just a bit unusual!



The grey rock is the overlying sediment and the process behind the distorted sequence in the first picture is known as soft sediment deformation. The reason for the deformation is uncertain, but it could have been caused by an avalanche before the sediment had lithified. Here is a little more information:

https://en.wikipedia.org/wiki/Vermilion_Cliffs_National_Monument

Sediment on the move

An avalanche is at the violent end of the spectrum for getting sediment to move, but there are others as this recent video from Tajikistan shows only too clearly.

<https://www.youtube.com/watch?v=1EGijvc8mMI>

Enough of this contemporary stuff

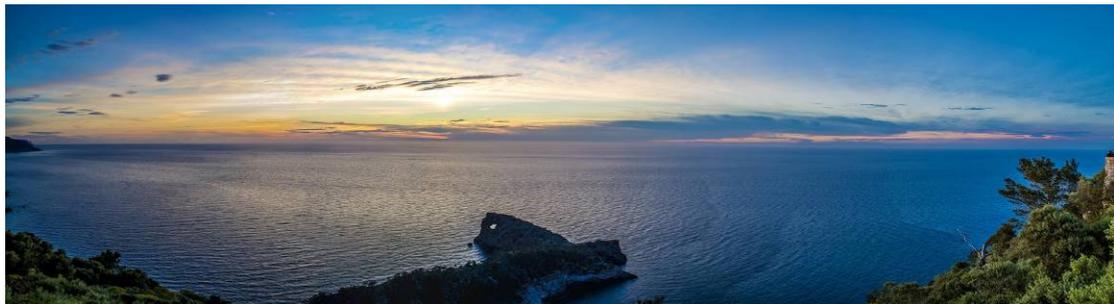


Well clearly its an anticline, but its location and composition are the interesting things. The car on the right-hand side of the road tells you that we are not in the UK, but are in fact in Quebrada de humahuaca in Argentina. The lithology is quite interesting, starting with Cambrian rocks, there are Ordovician, Cretaceous and Palaeogene. And here is a question for you knowledgeable geologists – is there anywhere that has a near complete sequence from the Cambrian to the Anthropocene.? Do let us know.

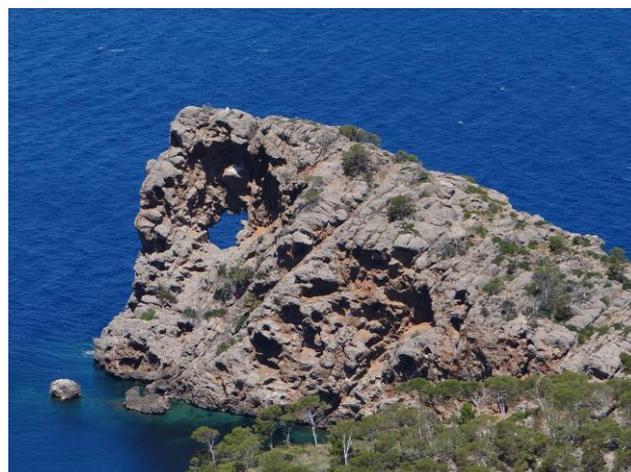
The gallery

Mallorca is a slightly schizophrenic destination for holidaymakers. Your editor's recent flight from Birmingham was accompanied by some hard drinking hen and stag parties, but also by more reflective couples who might be more inclined to visit the far west of the island. Why there? Well the [Serra de Tramuntana World Heritage Site](#) makes up the whole of this side of the island.

Kilometre after kilometre of this beautiful pine-clad landscape is interspersed with medieval villages. It is a cornucopia of limestone scenery and well worth exploration. The photographs below are of an area called Sa Foradada. The first, an evening image.

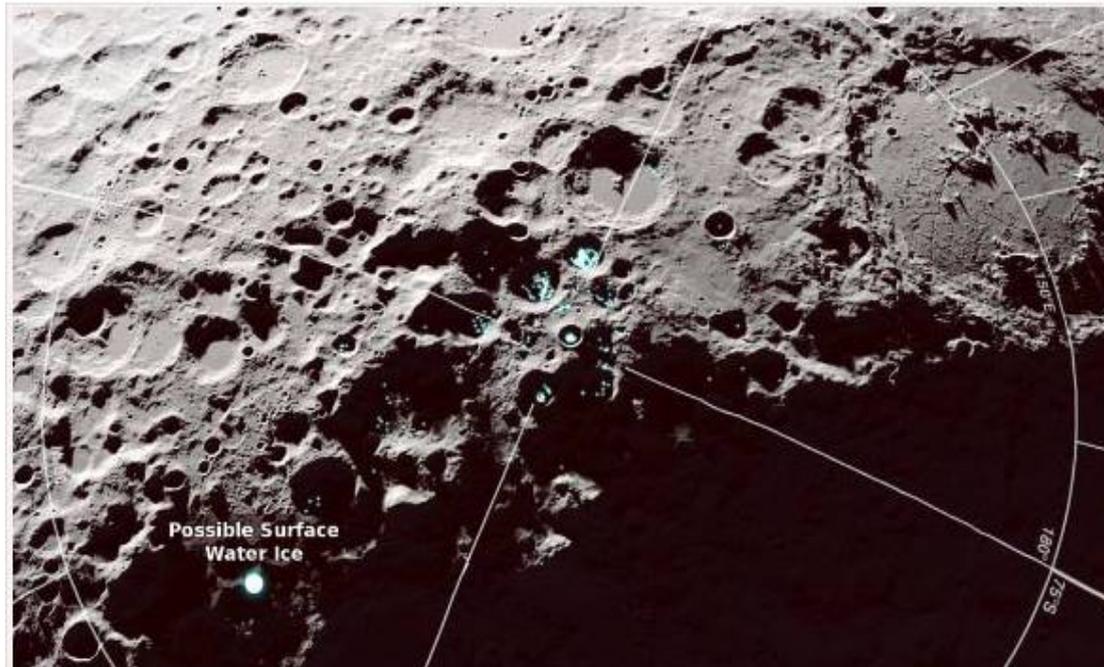


and yes, there is a hole in the headland. Plate tectonics and erosion in action.



Water, water everywhere, / Nor any drop to drink

Wrote Samuel Taylor Coleridge, and an unusually prescient statement it has proved to be, even if unintended. We reported recently about the gathering mass of evidence that water existed on Mars, and for that matter probably still does. Now an analysis of recent data from NASA's Lunar Reconnaissance Orbiter has found evidence of surface water near the Moon's south pole.



“We found that the coldest places near the Moon’s south pole are also the brightest places — brighter than we would expect from soil alone and that might indicate the presence of surface frost,” said Elizabeth Fisher, a graduate student at Brown University. The icy deposits appear to be patchy and thin, and it’s possible that they are mixed in with the surface layer of soil, dust and small rocks called the regolith.

“We’re not seeing expanses of ice similar to a frozen pond or skating rink. Instead, we are seeing signs of surface frost,” the researchers said. “The frost was found in cold traps” These are permanently dark areas located either on the floor of a deep crater or along a section of crater wall that doesn’t receive direct sunlight and where temperatures remain below -165 degrees Celsius. Under these conditions, water ice can persist for millions or even billions of years.

Holiday pictures

Please send us any geology/geomorphology pictures you happen to take on your summer holidays. We would love to have a selection to show in the autumn newsletters.

Rock of the month



Detail from an embryo of the Scalidophoran Markuelia from the Middle Cambrian of Australia. Anxious to know a little more. Your editor consulted various sources and found this “Markuelia is a vermiform, annulated introvertan animal known as embryonic fossils from the Lower Cambrian to Lower Ordovician.” *Well that just about says it all really.....*

Calendar

July	1	Visit: BGS Open Day
	26	Local field trip: Bromsgrove building stones
August	30	Area field trip: Hergest ridge
October	11	Monthly Talk: Metal Mines of Spain
November	8	Monthly Talk: Glaciology
December	13	Monthly Talk: Malvern Hills Geology
January	10	Effects of Meteorites, Asteroids and Comets
February	14	Speleothems
March	14	Turbidite Flows
April	11	The Devonian System

Who's who

The steering committee

James Berry	01684 560334	zostera66@hotmail.com
Geoffrey Carver	01684 560749	geoffrey.carver@btinternet.com
Hilary Edgeley	01386 462725	hilary.edgeley@btopenworld.com
Robert Eveleigh	01531 632947	eveleigh.r@gmail.com
Mary Geffen	01684 561890	mary@geffen.plus.com
Jackie Gribble	01684 565696	gardeners1@btinternet.com
Dick Harris	01886 880699	richardlangleyharris@gmail.com
Roger Hunt	01684 565926	rmrhunt@sky.com
Richard Newton	01684 565626	richard@renewton.plus.com
Maggie Smith	01684 567278	maggietoshsmith@gmail.com

Sub group contacts

Fossils

Christopher Wright 01905 20920 cnw48@hotmail.com

Landscape Appreciation

Raphael_Bate 01684 573882 _randhbate@gmail.com

Maps

Mary Geffen 01684 561890 mary@geffen.plus.com

Plate Tectonics

Dick Harris 01886 880699 richardlangleyharris@gmail.com

Newsletter

Geoff Carver 01684 560749 geoffrey.carver@btinternet.com

Library

Elizabeth Staley 01684 574392 js@cmail.co.uk

Group photographic resource

Phyl King photoresources17@gmail.com

Group website

Malvern U3A Geology



<http://geology.malvernu3a.org.uk/>