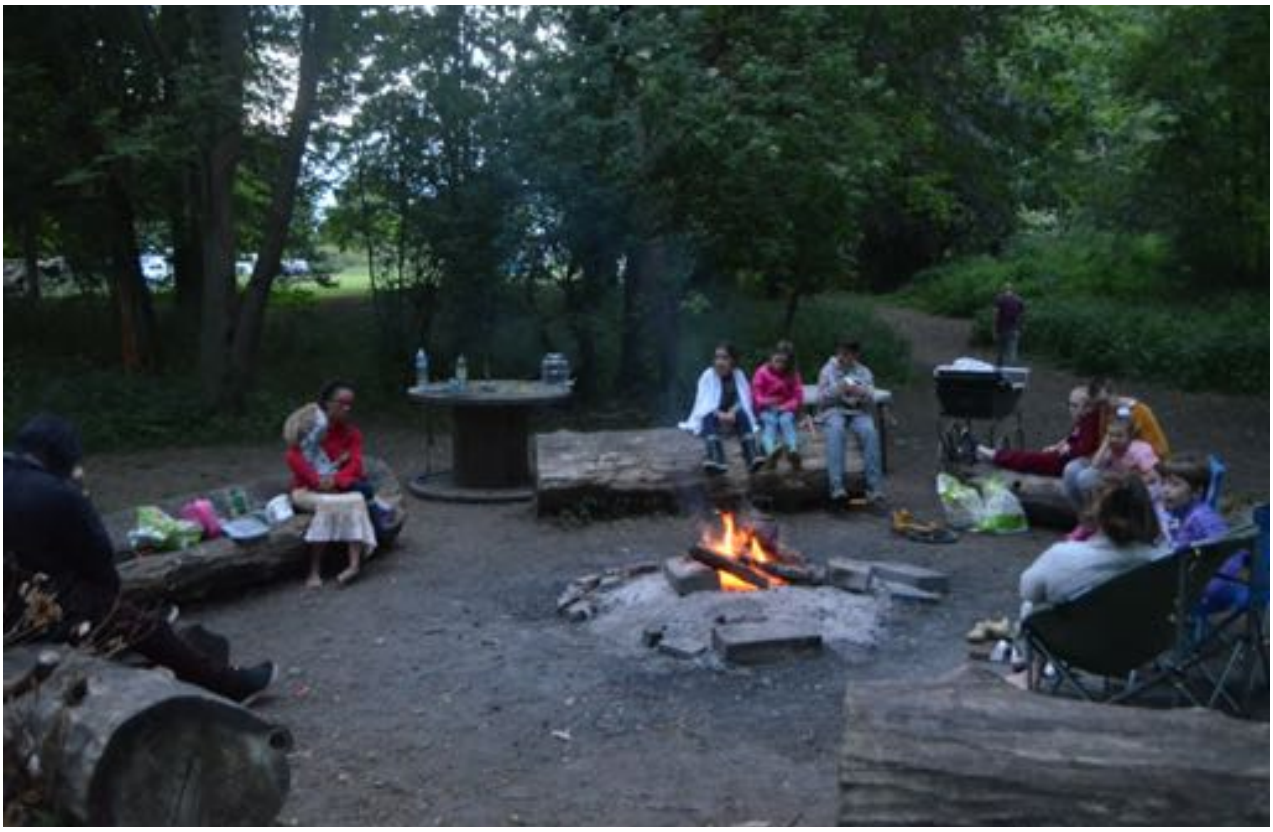
Diary of a weekend in the woods

ARCHAEOLOGY

ASTRONOMY

CREATIVITY

BIG HISTORY AT LITTLE ABINGDON



A Journey from Big Bang to Prehistory

This weekend a group of intrepid time travellers took a journey over 13.8 billion years to explore our very deepest of history.

The hearth has, for millennia, been a place for gathering, warmth, security, eating and discussion - our universities of the past.

Friday evening

A time of gathering and introductions. Meeting around the camp fire, this was also time for some fireside philosophy, sharing thoughts and ideas about the Universe, what it is, where it came from and what it is made of. And most importantly

to encourage creative thinking, marshmallows and hot chocolate.

Later in the evening it was a time for some astronomy and the night was obligingly clear and warm. Following our Universe theme our first stop was a globular star cluster (M13 in Hercules) an ancient ball of stars hovering on the very edge of our galaxy. We were peering some 26,000 years into the past.

We moved on to something called M57, a planetary nebula in Lyra and a glimpse into the future of what is likely to become of our own Sun. Following our discussion the previous night on elements, these are the ovens in which elements up to number 26 (iron) are made. We were also treated to a flyby from the International Space Station.

A couple of double stars later and it was time to turn in, we had a big journey in store for the following day.

Saturday

With the aid of our unique time machine we made our way, at a scale of 1mm to 10,000 years, back in time. We found the Big Bang just beyond St. Mary's Church and it was from here, the beginning of everything, that we set off on our journey.

Carefully heeding health and safety advice, particularly the rule of no interaction should we meet ourselves coming from the future in the opposite direction, our first stop was inflation.

The unimaginably fast expansion of the Universe, from infinitesimally smallness to the size of a golf ball in a trillionth of a trillionth of a trillionth of a second. For the first 380,000 years or so, there was no light, we wore blindfolds to replicate this great cosmic dark age.

20 metres further along the first stars started to pop into existence and light appeared, we could remove our blindfolds.

This was handy as we had to navigate a 900 metre journey around the church and common, along the river to the footpath back to the gate to Abington Wood. This part of the journey, about 8 billion years or so was occupied by star and galaxy formation, including those mysterious globular clusters we had observed the previous evening. But at the gate something amazing (for us humans at least) started to happen - the formation of our solar system.

And this is where we has some tangible evidence for our deep past. A carbonaceous crondrite meteorite containing crondules. These are leftovers for the solar nebula from which the Solar System formed - we were holding and looking at something older that the world itself.

A world without oxygen

Our outdoor classroom

Riverside exploration

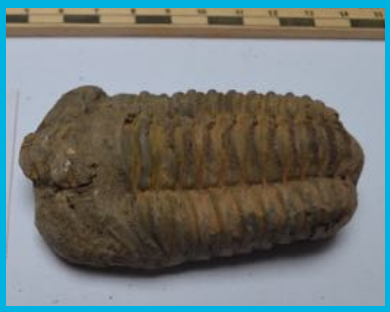
Rivers must have played a crucial part in our prehistoric landscapes. A source of food and water, a means of transportation and navigation, a great place for a swing - humans and rivers have been intertwined for millennia.

Our samples:

Crondules - older than Earth

Crondrites - bringer of life and water to the world?

Stromatolite - our single celled ancestors.



Trilobites - rulers of the world.

Our samples were quite small, it is not easy to come by material that is older than Earth! However, a magnifying glass revealed the crondules. Our second, larger sample of a similar meteorite was one of the carbonaceous type that may have been the trigger for life, and brought water to Earth. Or not. This was a great subject to discuss.

In a world without oxygen, red tinted glasses were required to experience this early Earth properly. And then it was time for lunch.

The second stage of our journey started with the formation of Earth and the origins of life. We had a sample of stromatolite with us - the first single celled life, fossilised into a form that would make a very nice kitchen surface. We were holding our very earliest of ancestors!

At the sculpture in the woods we encountered the Cambrian Explosion - an explosion of life on our planet, and particularly an explosion of trilobites. A selection of samples made a (fossilised) appearance. Our trilobite guests had arrived from America, Morocco and China but of course when they were scurrying their way around, the world was just one supercontinent - Pangaea.

After 1380 meters from St. Mary's and Big Bang we found ourselves almost at the present day and humanity. To demonstrate this final couple of millimetres of the journey we needed the most specialised component of our time machine - the Adelaide Stick. This is top secret technology, but it was produced at our final stop, the outdoor classroom,where we examined some Palaeolithic human tools, dating from 400,000 to 30,000 years ago.

By now the effects of time travel were setting in and it was time for a snooze - time lag is way worse than jet lag!

In the late afternoon hunter gathering was the theme and we collected elderflower (and daisies!) for a refreshing cordial and a couple of crayfish from the river for supper.

The hearty dinner was followed by more astronomy. Another clear night revealed a fantastic globular cluster (M92) and some amazing double stars including Mizar in Ursa Major and Albireo in Cygnus.

Albireo is one of the most beautiful objects in the night sky. To the eye it is a bright yellowish star but through the telescope it transforms into a glorious double star - orbs of gold and blue. Mention must go to Henry whose enthusiasm for the astronomy was amazing, not only being able to describe the objects he was observing but also to operate the telescope.

Sunday

Sunday activity focussed on Mesolithic hunter gatherers. In Britain, the Mesolithic was a period from the end of the last ice age, around 12,000 years ago, through to the early farmers, the Neolithic, around 6500 years ago. The Mesolithic had what might seem to us

to be a fantastic diet, plenty of nuts, berries, shellfish and venison.

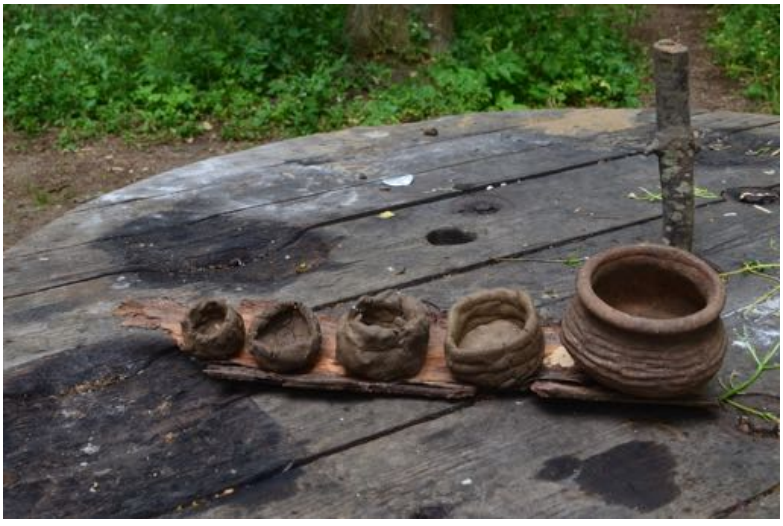
We needed a red deer to hunt and Xavier kindly volunteered. Working as a team the rest of the group had to hunt him down and tag him. Our red deer proved crafty and clever but was eventually caught by his own sister no less, who leapt from behind a tree for the kill! This was great fun and a fascinating learning experience involving teamwork, communication and stealthiness.

Remaining on the topic of stealth our next activity involved sneaking up on a blindfolded Mesolithic person guarding a set of keys (not particularly Mesolithic but most jangly) and armed with a water pistol.

Back around the fire we discussed why these Mesolithic people with such a fab diet should decide they would prefer instead to grow their own crops - farming. There were lots of great ideas and our specific theme is one still debated today. Was it the idea of farming that arrived in Britain, or was Britain "invaded" by farmers bringing their technology with them?

Our final activity was inspired by a Neolithic coiled pot. Could we replicate this? We found clay in the woods to quarry and took it back to the camp for experimentation. The results were impressive: could we spot which pot was the real 6000 Neolithic one?

Maybe, but this was a first attempt at this new technology.



And this concluded our summer skycamp for 2019 but we hope to be back at Abington Woods for an Autumn camp with a theme of "Being Prehistoric".

The astronomy:

We were using an 8 inch Celestron C8 Schmidt Cassegrain telescope on a completely manual German equatorial mount.

We like this approach. The absence of onboard telescope computers and power supplies means there is less to go wrong and we prefer to seek out objects for ourselves using just our knowledge and experience of the night sky.

Our prehistoric ancestors of course had no such devices. Telescopes are instruments of the 18th and 19th centuries and, in our view, astronomy in its purest and most sustainable form.