

What is the BGA?

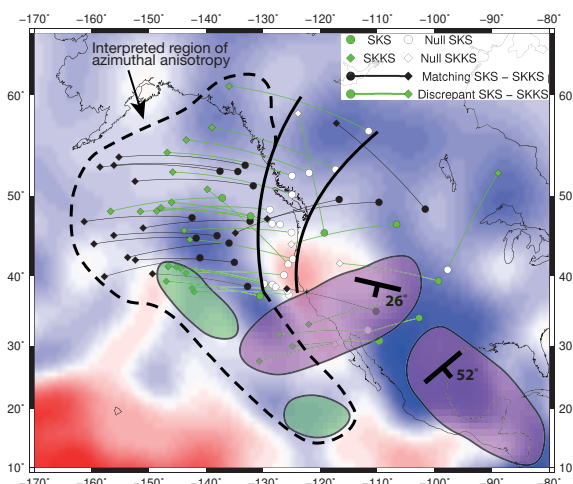
The BGA is a joint association of the *Geological Society of London* and the *Royal Astronomical Society*. It aims to promote geophysics in the UK and has an active political voice, regularly contributing documents to national enquiries and committees. As such it is important that it represents the views of the strong geophysics postgraduate community that we have in the UK. We need your input! Email your postgraduate representative Lauren with any queries or suggestions you might have for the committee and we will make sure to address it.

PhD Paper of the Month: A potential post-perovskite province in D'' beneath the Eastern Pacific: Evidence from new analysis of discrepant SKS-SKKS shear-wave splitting, Asplet et al., *Geophysical Journal International*, 2020

The lowermost 200km of the mantle, also known as D'', is an enigmatic region of the Earth which is known to be heterogeneous and seismically anisotropic. The dynamics and composition of this region, which are crucial to our understanding of the long term evolution of the mantle, are currently not well understood. In our paper we offer improved observational constraints of seismic anisotropy in D''. This is an important stepping stone on the path to fully understanding the complexities of the D'' layer.

We make observations of differential shear-wave splitting between 420 event-station pairs of SKS and SKKS, core-transiting shear-wave phases, in the Eastern Pacific. Using a newly devised multi-parameter method, we are able to more confidently identify statistically significant discrepant shear-wave splitting. Our results highlight a significant region of azimuthal anisotropy in D'', bounded by a sudden transition to apparent isotropy evidenced by a consistent north-south trend of SKS-SKKS pairs where one phase shows no splitting (a null observation). Our preferred interpretation for this azimuthal anisotropy is a large region of lattice-preferred orientation of post-perovskite in D'', which is in line with previous studies nearby. We interpret this deformation as due to the impingement of subducted material from the Farallon slab at the core-mantle boundary.

We are presently working to test our interpretations by jointly inverting SKS, SKKS and ScS waveforms for seismic anisotropy in this region.



Matching and discrepant SKS-SKKS event-station pairs where at least one phase has been split, plotted over the S40RTS isotropic shear-wave velocity model at the core-mantle boundary. SKS (circle) and SKKS (diamond) results are plotted at their up-going pierce points at the core-mantle boundary. The solid lines denote where we see the change in anisotropy in D'' from our observation of null-split SKS-SKKS pairs. Previous studies of D'' anisotropy in this region are shown by the green (Long, 2009) purple (Nowacki et al., 2010) bubbles. The orientation and dip of the tilted transverse isotropy (TTI) modelled by (Nowacki et al., 2010) is also shown.

PhD Paper of the Month! If you have a recent publication and would like it broadcasted, please email lauren.cox.15@ucl.ac.uk or include @britgeophysics in your tweet, and we will aim to retweet! Once a month we will choose a paper to promote on social media!

Your New BGA Committee Postgraduate Representative

Hello everyone, I'm Lauren and I'd like to introduce myself as the new Postgraduate Representative for the BGA Committee.

I will be taking over the role from Jade Eyles and would like to thank her for all her hard work over the last two years. I am currently half way through my PhD and really looking forward to supporting and promoting the BGA Postgraduate community.

If you'd like to get in touch, you can contact me at lauren.cox.15@ucl.ac.uk.

RRS Sir David Attenborough begins sea trials

The UK's flagship polar research vessel is beginning two weeks of technical trials in the Irish sea before being officially handed over to NERC.

Ice trials in the Arctic are due to commence in early 2021, with her maiden research voyage to Antarctica following in November. You can find updates on her progress at the British Antarctic Survey website, bas.ac.uk.

Calling New Subscribers!

If any new Postgraduate Geophysics students have recently joined your department, please encourage them to subscribe to our mailing list. To keep up to date on opportunities promoted by the BGA, simply go to <https://geophysics.org.uk/about/join-the-mailing-list/>.

Outreach Funding

BGA would like to invite applications for funding for [public outreach activities](#) to promote understanding of, and engagement with, any area of geophysics.

Applications are open to anyone studying or working in the field of geophysics at a UK university or research institution. From a total funding pot of £2000, we are looking to support as many quality applications as possible.

Applicants can request the full £2000, however we may offer a lower sum if there are several applications that all merit funding. In the light of the current COVID-19 pandemic, applicants may wish to focus on activities that can be delivered remotely, or those that have sufficient flexibility to allow for this to happen should the need arise. We especially welcome applications for activities that seek to work with groups that are currently under-represented within the geophysics community.

The funding can be used over a 12 month period, starting from 1st January 2021. The BGA will promote the activities on our website and social media. We will require successful applicants to write a blog post for the BGA website and encourage the submission of an article to Astronomy & Geophysics.

To apply, please submit a proposal (1 side of A4, 11pt, Arial) detailing the activities you intend to pursue and how the money will be spent. Send applications, and any queries, to amy.gilligan@abdn.ac.uk by midnight 30th November. The results will be announced by 23rd December.