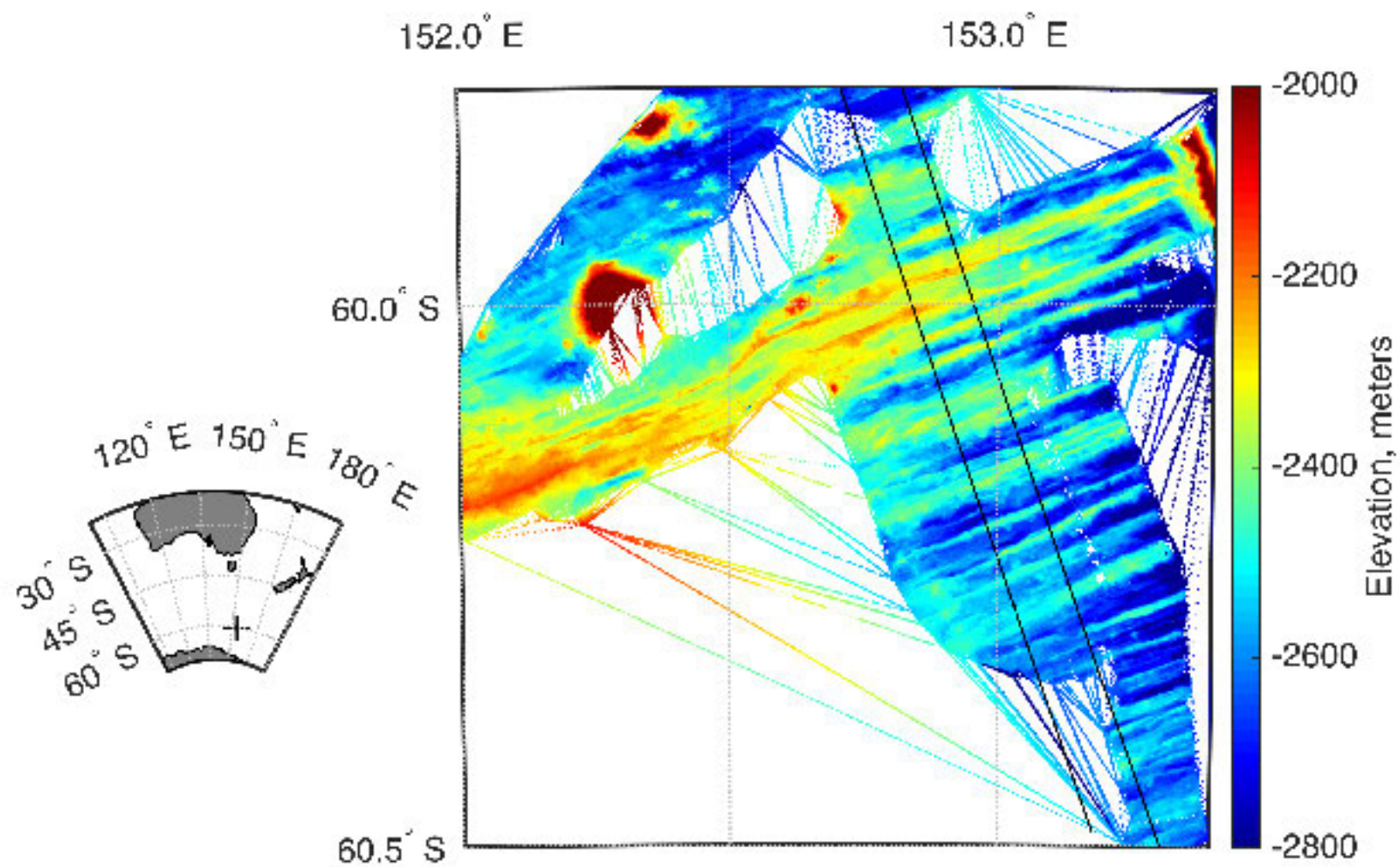


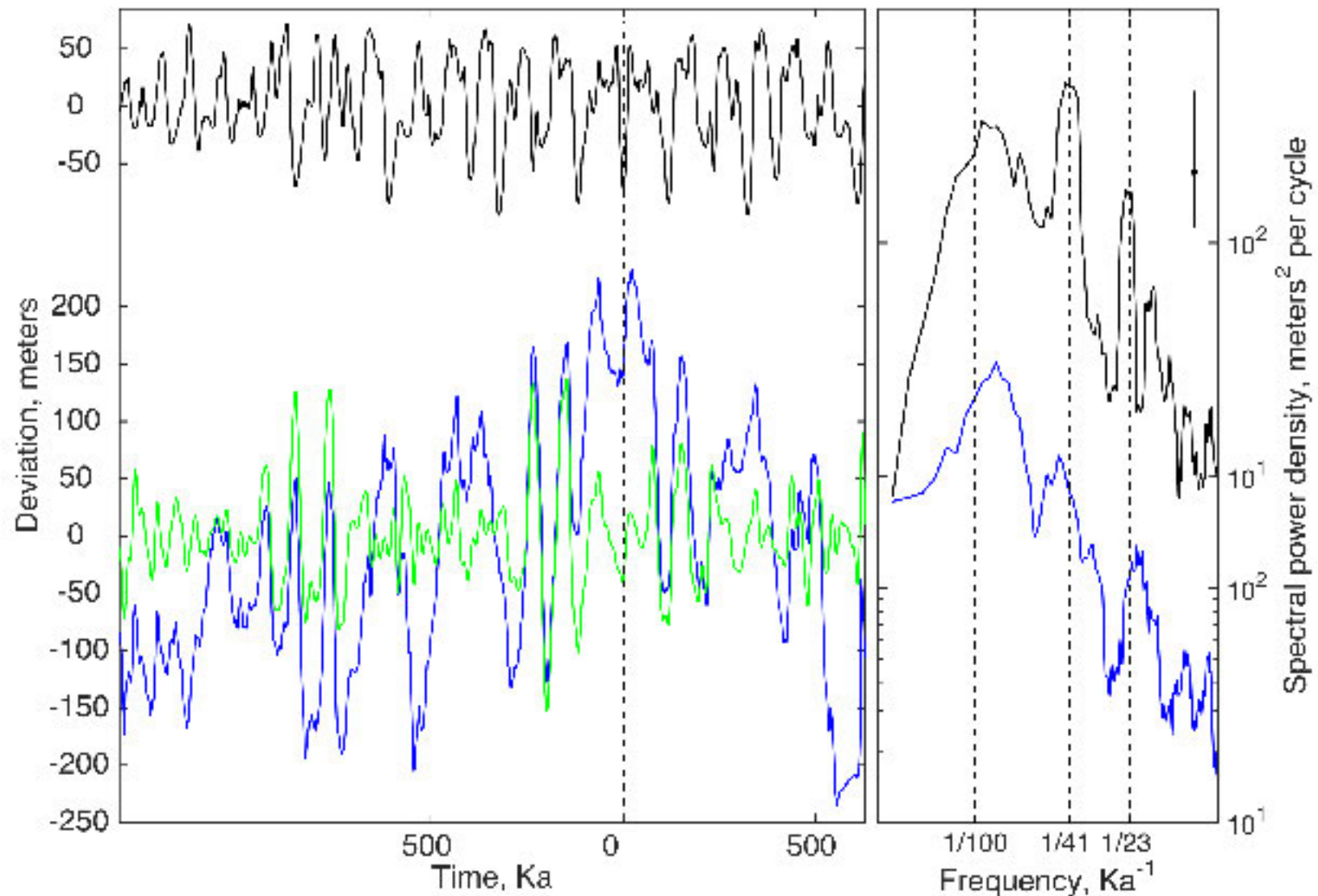
Spectral analysis of ridge bathymetry and some speculation

Peter Huybers, Suzanne Carbotte, James Gibson, Bridgit Boulahanis

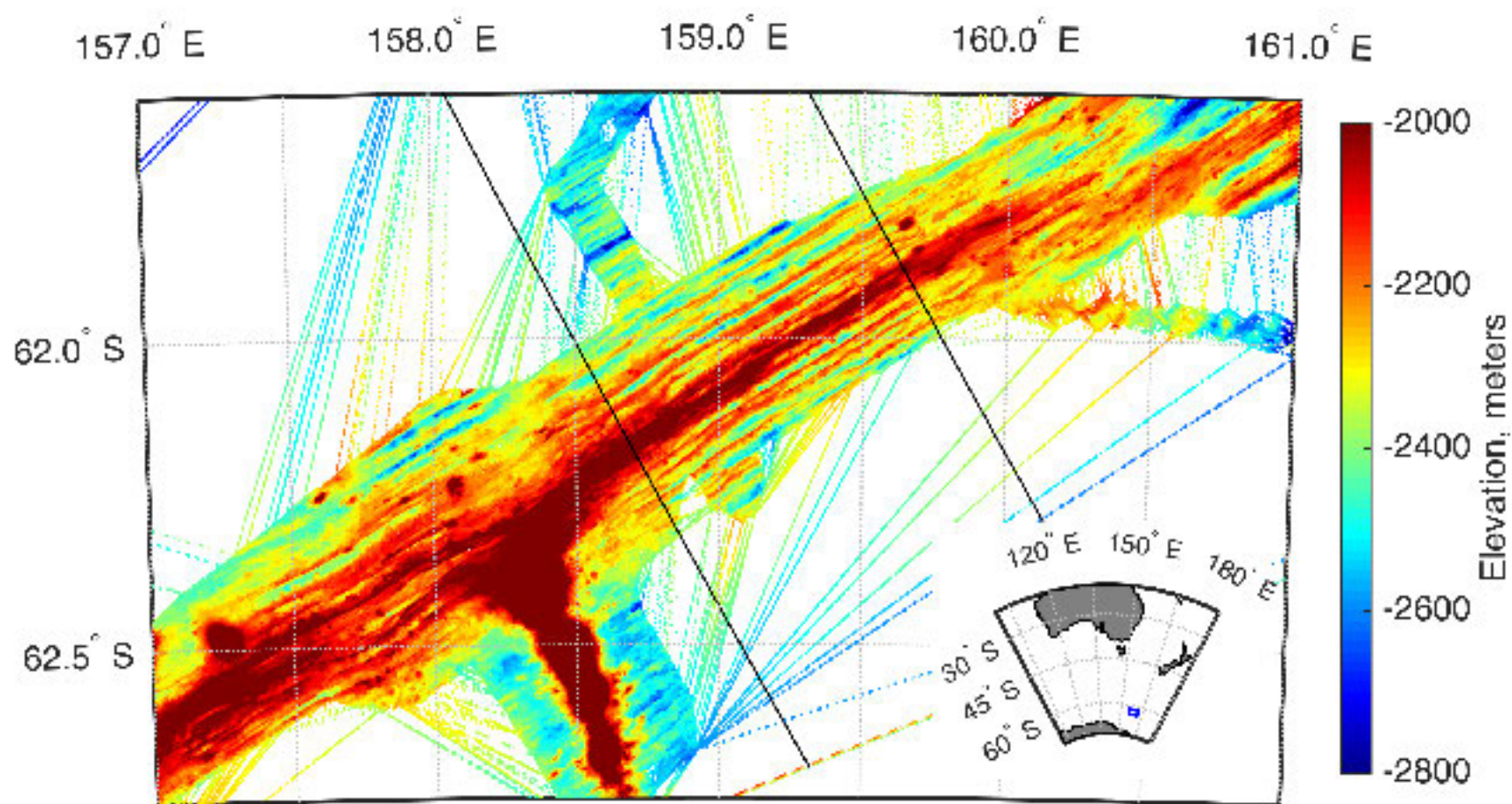
Section KR1



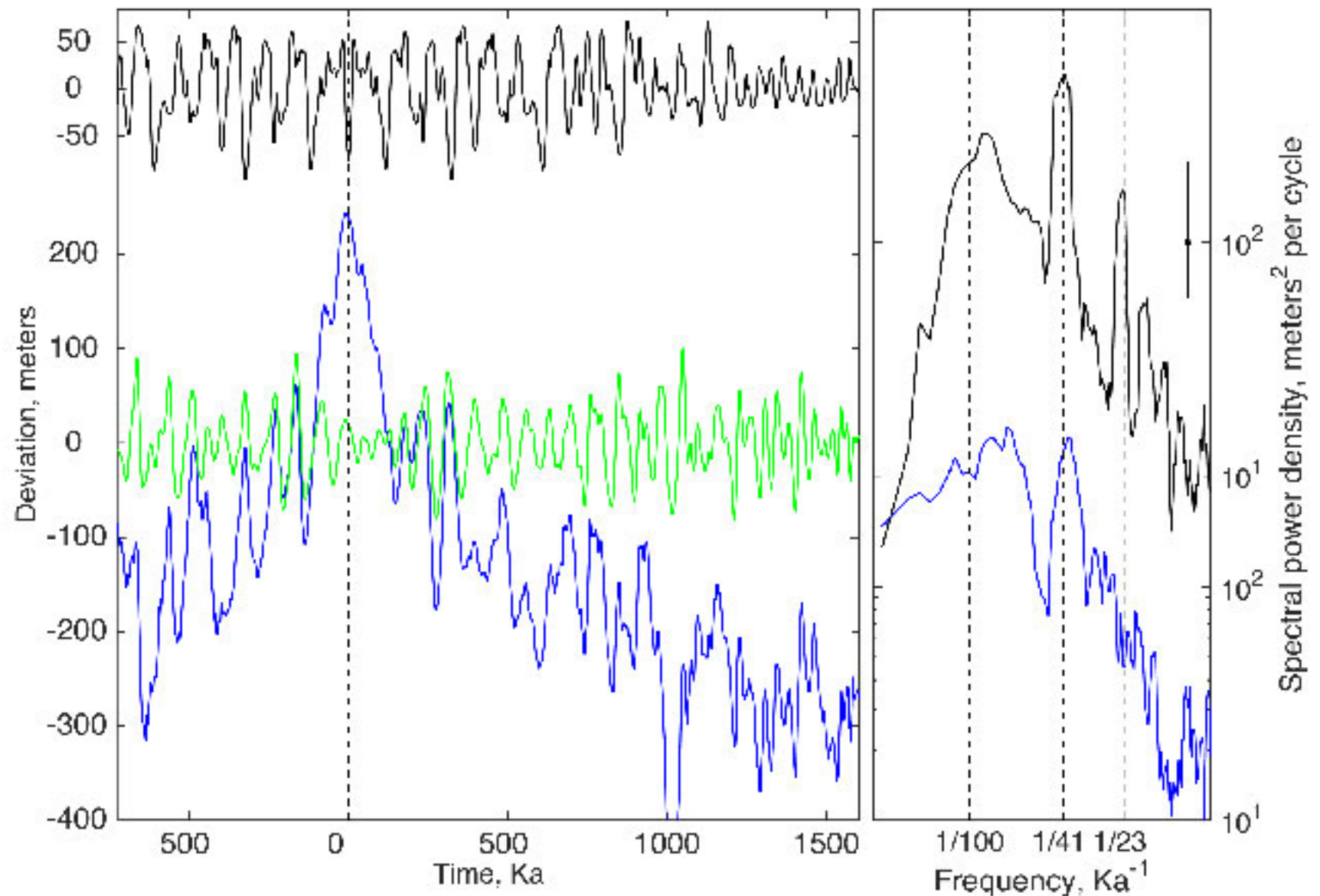
Section KR1: time series analysis shows Milankovitch Peaks



Section KR2

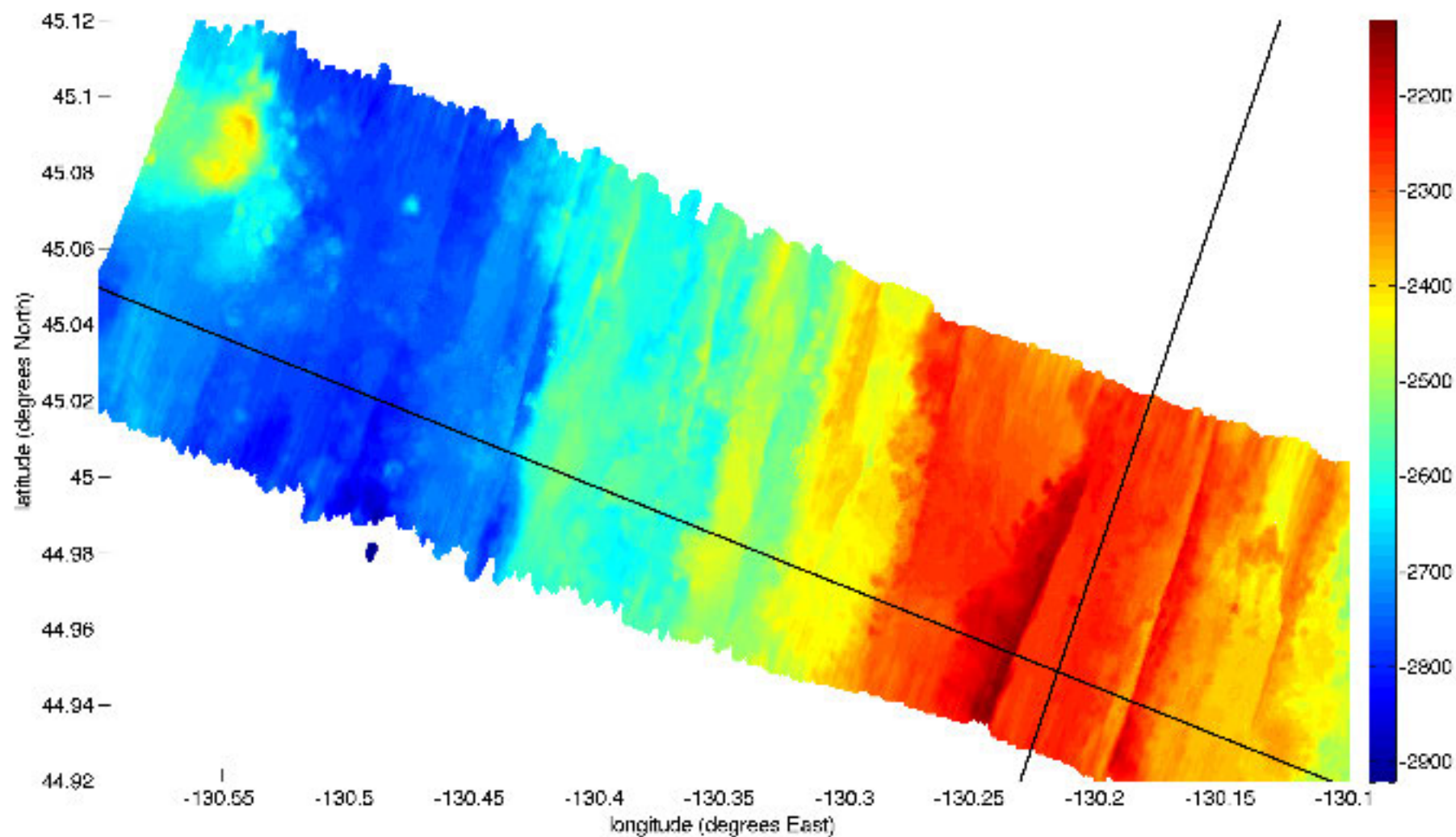


Section KR2: time series analysis shows some Milankovitch Peaks



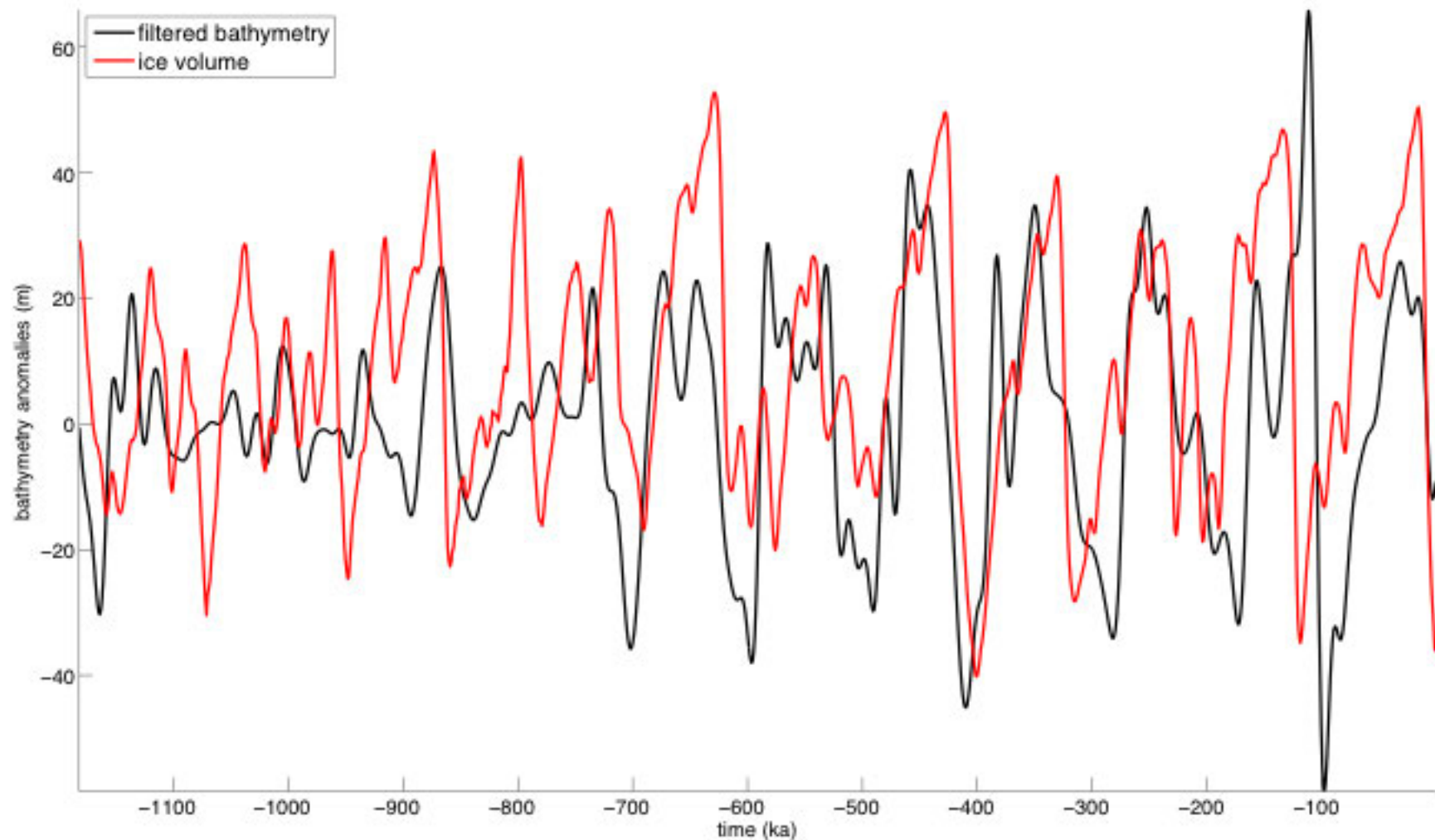
Juan de Fuca ridge:

Bathymetry along a single carefully selected track



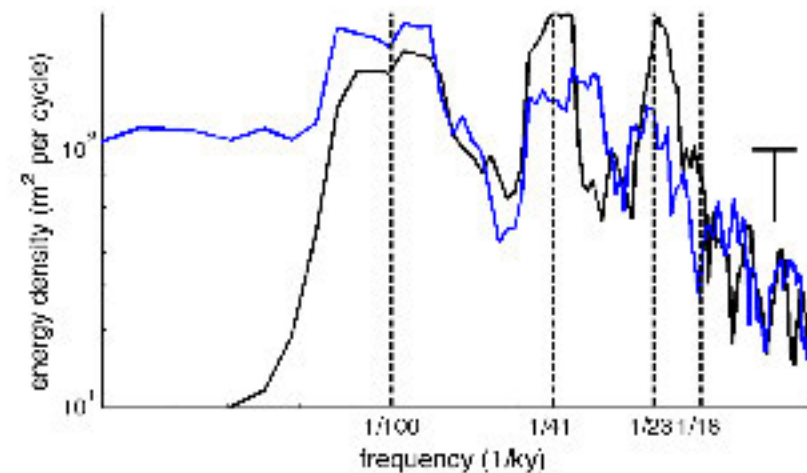
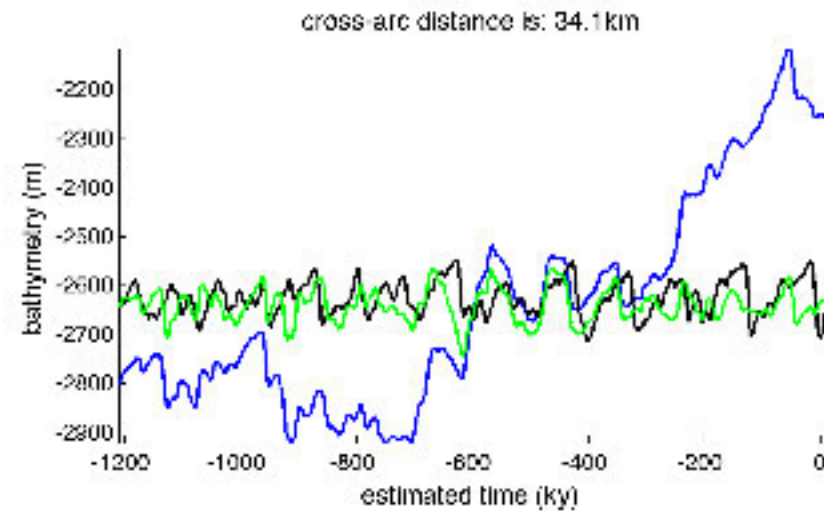
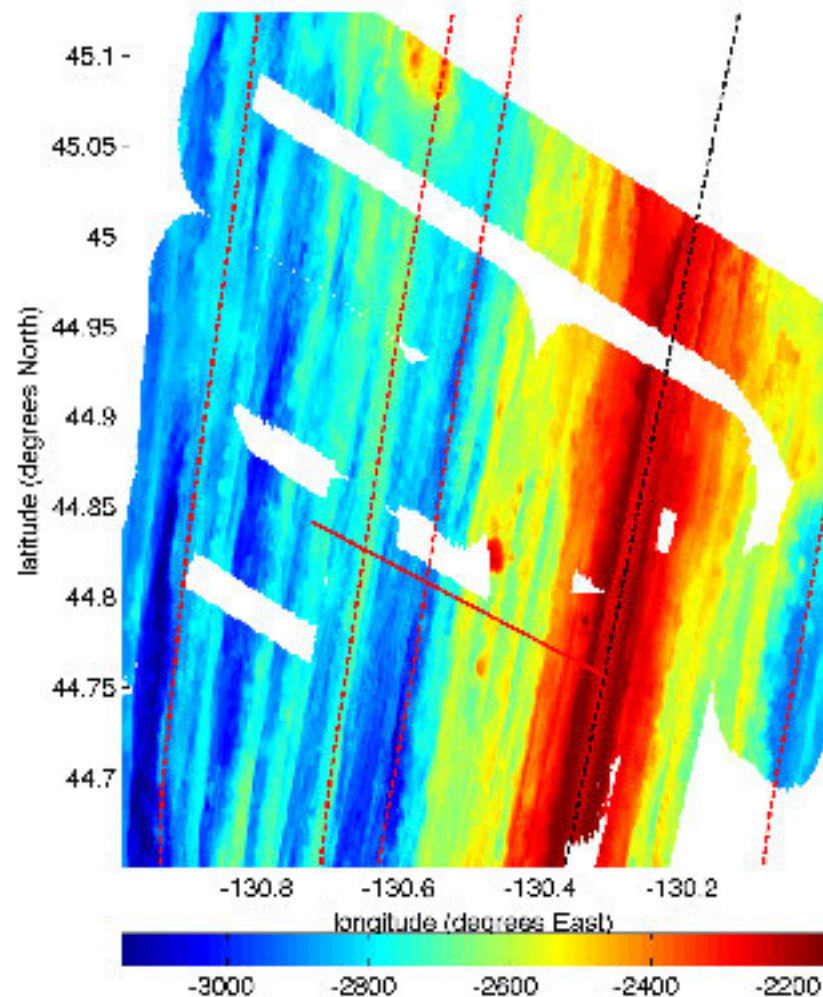
Juan de Fuca ridge:

Filtered bathymetry variability appears similar to ice volume



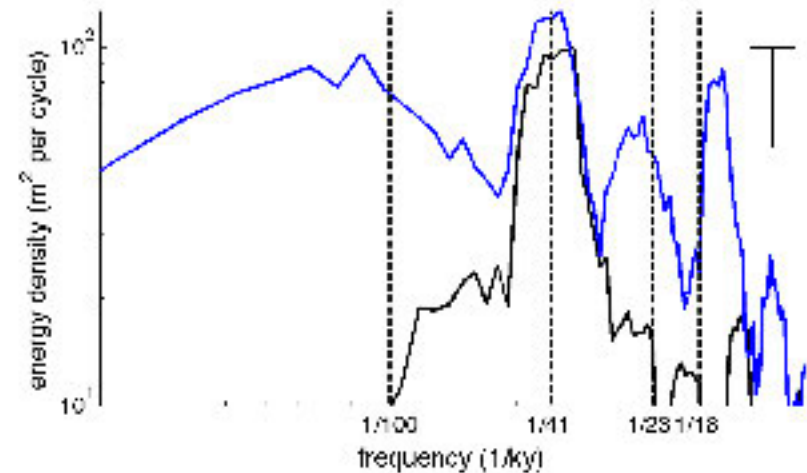
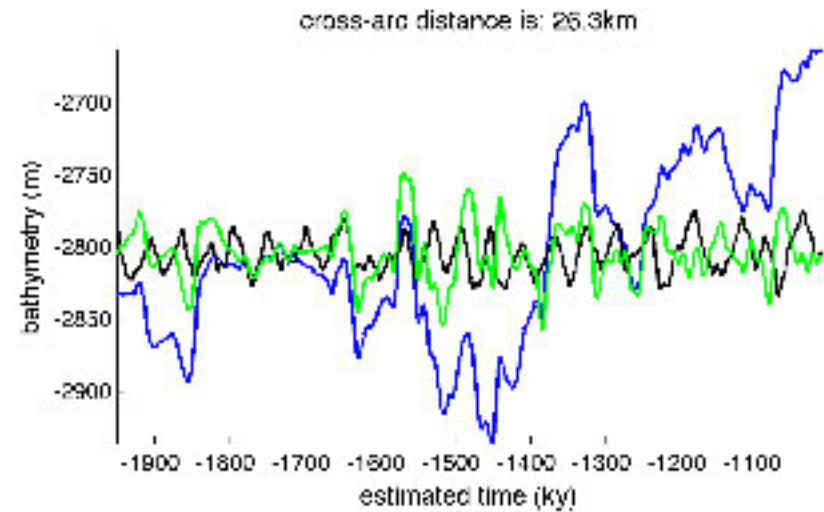
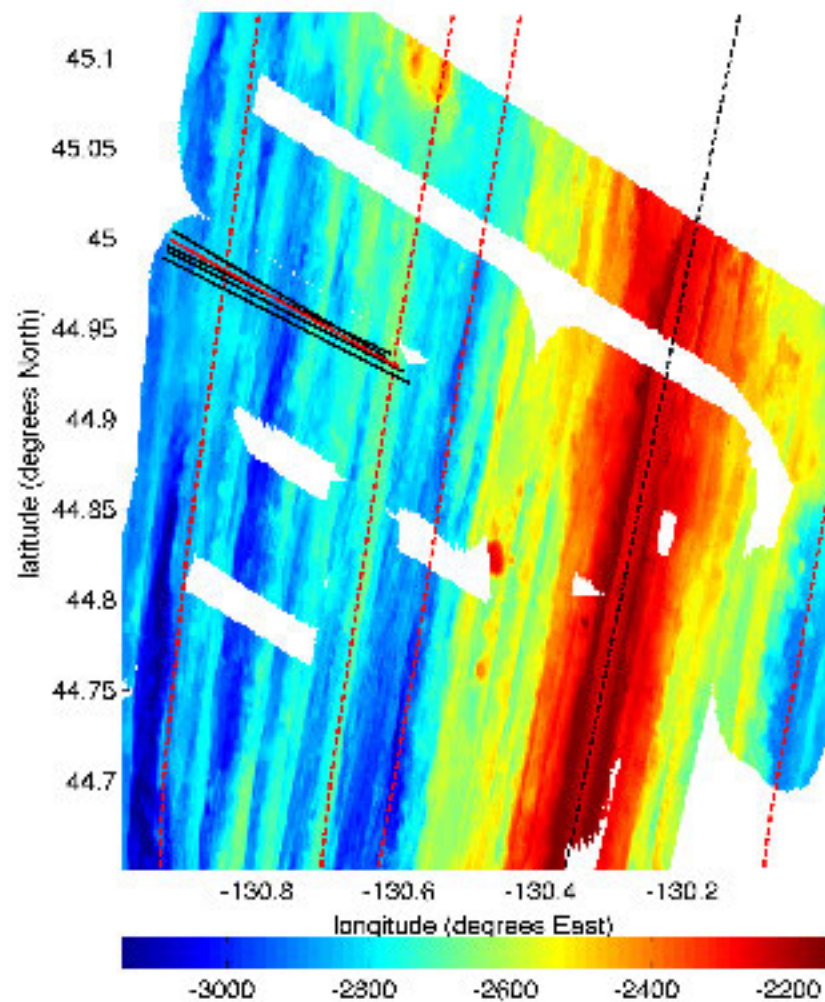
Juan de Fuca ridge:

Late Pleistocene spectral variability mirrors ice volume



Juan de Fuca ridge:

Early Pleistocene shows significant precession variability



Conclusions and further work

- Both Antarctic and Juan de Fuca Ridge bathymetry show strong evidence of variation at 100 ky ice age, 41 ky obliquity, and 23 ky precession period variability.
- Spectral results are, however, sensitive to details including data resolution, heterogeneities in data, and the presence, faults, sea mounts, and sediments.
- Further work plans are for a more localized wavelet approach, integration of magnetic reversal constrains, and correcting for the presence of faults both in terms of amplitude and time.
- Interesting, Early Pleistocene variability shows variability near precession periods, possibly because of a nonlinear ridge response or regional ice-sheet and sealevel variations.