

## Jason II dive navigation information

PPFX re-generated for lowerings J2-1295 and J2-1296 post cruise due to unreasonable values for altitude in DVZ records, used during USBL-only processing. This meant an inaccurate record in the .ppi deliverable.

Improved USBL processing script, replacing DVZ with GVX for attitude and DDD for altitude. Added several plots to check params against other trusted data records so this doesn't happen again.

photoinfov2.2 used to generate ppx for Sulis stills and TIFgrabs.

I was also asked to confirm that the geographic coords history was correct. Added some checks/plots to compare against other params (VFR vs VPR). These are seen when processing USBL-only.

Rechecked the USBL+DVL versions done at sea (lowIDs 1293, 1294, 1297). Lowerings 1293 and 1297 included occasions that brought the vehicle off bottom and out of DVL lock. There were some large discrepancies between renav and USBL at the times of lost bottom lock, but at sea I chose to deliver these rather than USBL-only versions. Including DVL measurements improved the renav during the important on-bottom times, distorts vehicle position during unimportant high-altitude times.

Nevertheless, the science party may decide they prefer renav that shows the more accurate high altitude positions, and are willing to have noiser on-bottom histories. So I additionally renavigated J2-1293 and J2-1297, added them to the package of improvements. Generated PPFX for the USBL-only versions of these lowerings.

SJM

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ADDED NOTES from Bill Chadwick to clarify (08 Dec 2020):

The second version renav files for J2-1293 and J2-1297 are USBL-ONLY navigation. They both include time intervals when the ship was chasing floats at the surface and Jason was up off the bottom that are not included in the first version of the renav files. Therefore the version 1 renav files should be used for dives J2-1293, 1294, and 1297.

On the other hand, the second version renav files for J2-1295 and J2-1296 are USBS+DVL navigation and they include corrected numbers for Jason Pitch, Roll, and Altitude. So the version 2 renav files should be used for dives J2-1295 and 1296.