GSA DATA REPOSITORY 2013084 N. McQuarrie and D. J.J. van Hinsbergen

Rotation and shape file in GPlates (http://www.gplates.org) format, and a readme file detailing the reconstruction discussed in this paper, is available online at http://www.geologist.nl under 'Reconstructions'.

The Appendix contains rotation (.rot) and shape (.gpml) files. The .gpml files define the line features and polygons of the reconstruction, and the .rot file defines the rotation parameters through time.

Upload these files in the freeware program GPlates, which can be downloaded from http://www.gplates.org. The .rot file described the rotations relative to each other, and eventually all with respect to Eurasia (301). The name in the .rot file corresponds to the names of features in the .gpml file.

To view these files in GPlates, take the following steps:

(1) Download the attached files

(2) Open GPlates

(3) Go to File > Manage Feature collections

(4) In the Manage Feature collections screen, click 'open file' and open the .gpml and one of the .rot files

(e) In the top left of the screen. type the age you wish to view (this reconstruction goes from 83.5 Ma to 0 Ma, with the notion that pre-20 Ma deformation of Iran is not reconstructed. You can also press 'Play' and see the entire movie of the reconstruction

(f) If you click on the green Africa-with-black-arrow logo on the left-hand side of the screen, you can select every item on the screen. On the top right-hand side, you will see the name and the code of the item you selected. The rotation parameters of every file are described in the .rot files that are included in the Appendix.

The .rot files are given in an Africa-fixed reference frame, and show reconstructed positions relative to Africa. To fix other plates (e.g. Eurasia, code 301), in GPlates go to 'Reconstruction', choose 'Specify Anchored Plate ID' and type '301' to fix Eurasia.

For further instructions on how to modify the reconstruction or add to it, we refer the reader to the manual that comes with the GPlates program.