**Table S3.** Benthic δ18O Species Correction Factors

|  |  |  |
| --- | --- | --- |
| **Species** | **Offset (‰)** | **References** |
| *Bulimina aculeata* | - 0.06 | *Pahnke and Zahn* [2005] |
| + 0.11 | *Oba and Murayama* [2004] |
| *Bolivina species* | 0 | *Shackleton and Hall* [1982] |
| *Cibicidoides species = C. wuellerstorfi = C. kullenbergi = Fontbotia wuellerstorfi = Planulina species = P. wuellerstorfi* | + 0.64\* | *Duplessy et al.* [1970, 1984], *Shackleton and Opdyke* [1973], *Shackleton* [1974], *Woodruff et al.* [1980], *Graham et al.* [1981], *Shackleton and Hall* [1984], *Mix and Fairbanks* [1985], *Labeyrie et al.* [1999], *Waddell et al.* [2009] |
| *C. kullenbergi* | + 0.46 | *Pahnke and Zahn* [2005] |
| *C. species* | + 0.5 | *Cheng et al.* [2004] |
| *C. mundulus* | + 0.6 | *Stott et al.* [2007] |
| *C. wuellerstorfi* | + 0.65 | *Stott et al.* [2007] |
| *Elphidium batialis* | + 0.9 | *Oba and Murayama* [2004] |
| *Epistominella exigua* | 0 | *Mackensen et al.* [1989, 1994] |
| *Globobulimina affinis* | - 0.3 | *Shackleton et al.* [2000] |
| *Globocassidulina subglobosa* | - 0.1 | *Shackleton and Hall* [1984] |
| *Hoeglundina elegans* | - 0.4 | *Shackleton and Hall* [1984] |
| - 0.6 | *Shackleton et al.* [2000] |
| *Melonis barleeanum* | + 0.3 | *Shackleton and Hall* [1984] |
| + 0.4 | *Labeyrie et al.* [1999], *Shackleton et al.* [2000] |
| + 0.49 | *Pahnke and Zahn* [2005] |
| *Melonis pompiliodes* | + 0.3 | *Shackleton and Hall* [1984] |
| *Melonis species* | + 0.4 | *Labeyrie et al.* [1999], *Shackleton et al.* [2000] |
| *Nuttallides umbonifera* | + 0.44\* | *Curry* [1996] |
| *Oridorsalis species* | 0 | *Shackleton and Hall* [1984], *Cheng et al.* [2004] |
| *Pullenia bulloides* | 0 | *Mojtahid et al.* [2005] |
| *Sphaeroidina bulloides* | - 0.1 | *Shackleton and Hall* [1984] |
| *Stilostomella species* | - 0.15 | *Shackleton and Hall* [1984] |
| *Uvigerina species = U. akitaensis = U. excellens = U. hollicki = U. peregrina = U. senticosa* | 0\* | *Shackleton* [1974], *Shackleton and Hall* [1984], *Labeyrie et al.* [1999], *Fontanier et al.* [2006] |
| *U. peregrina* | - 0.15 | *Shackleton et al.* [2000] |
| *U. pygmea* | + 0.08 | *Nürnberg et al.* [2004] |

\* indicates values that we applied to additional records