Advances in altimetric snow depth estimates using bi-frequency SARAL/CryoSat-2 Ka/Ku measurements.

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Supplementaries

1 Arctic 2015 monthly snow depth maps
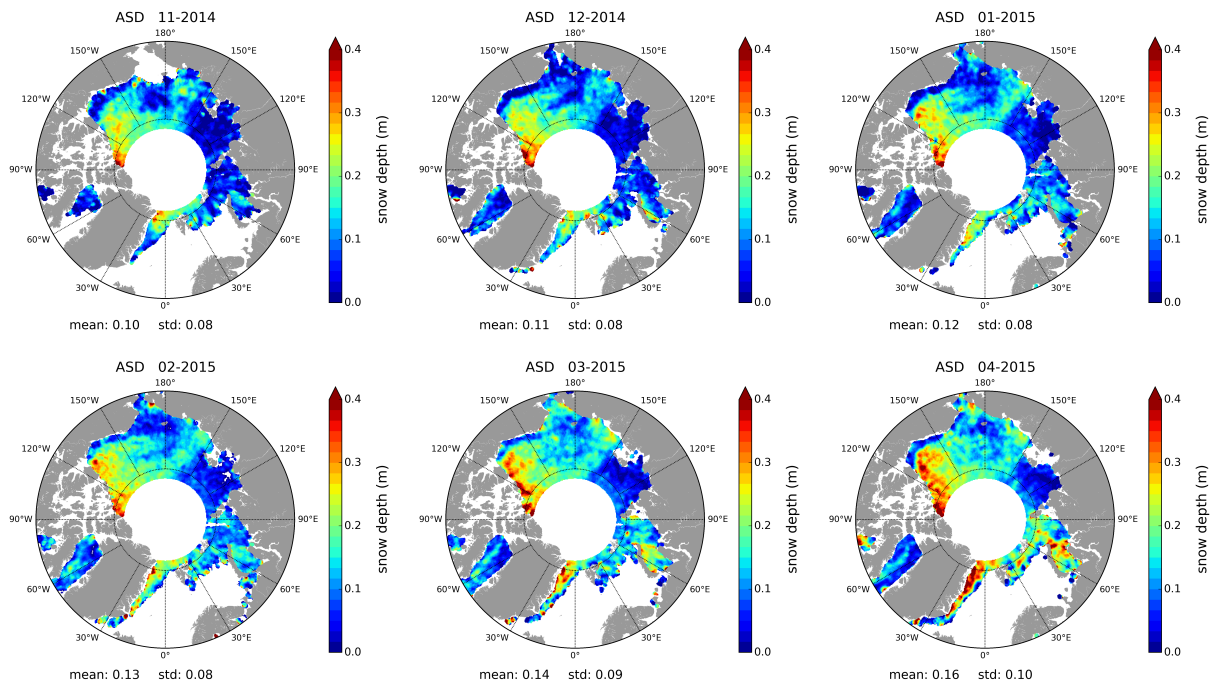
Figure S1. ASD monthly mean snow depth maps for the six Arctic winters 2014-2015.
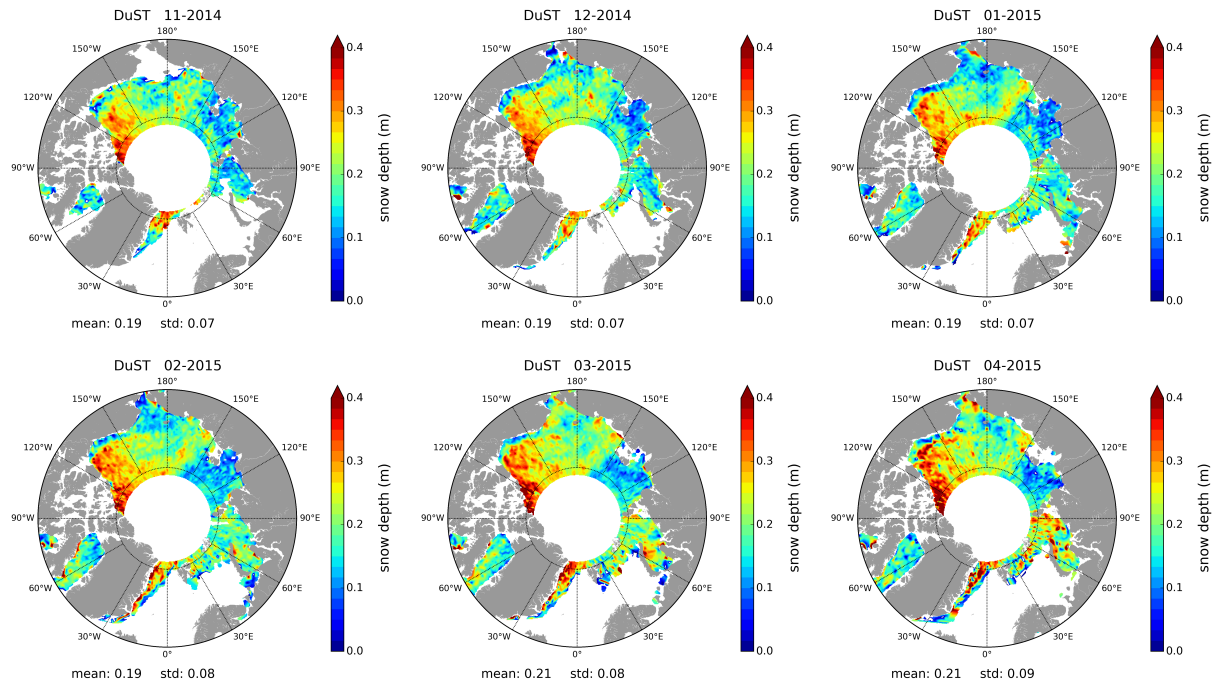
Figure S2. DuST monthly mean snow depth maps for the six Arctic winters 2014-2015.
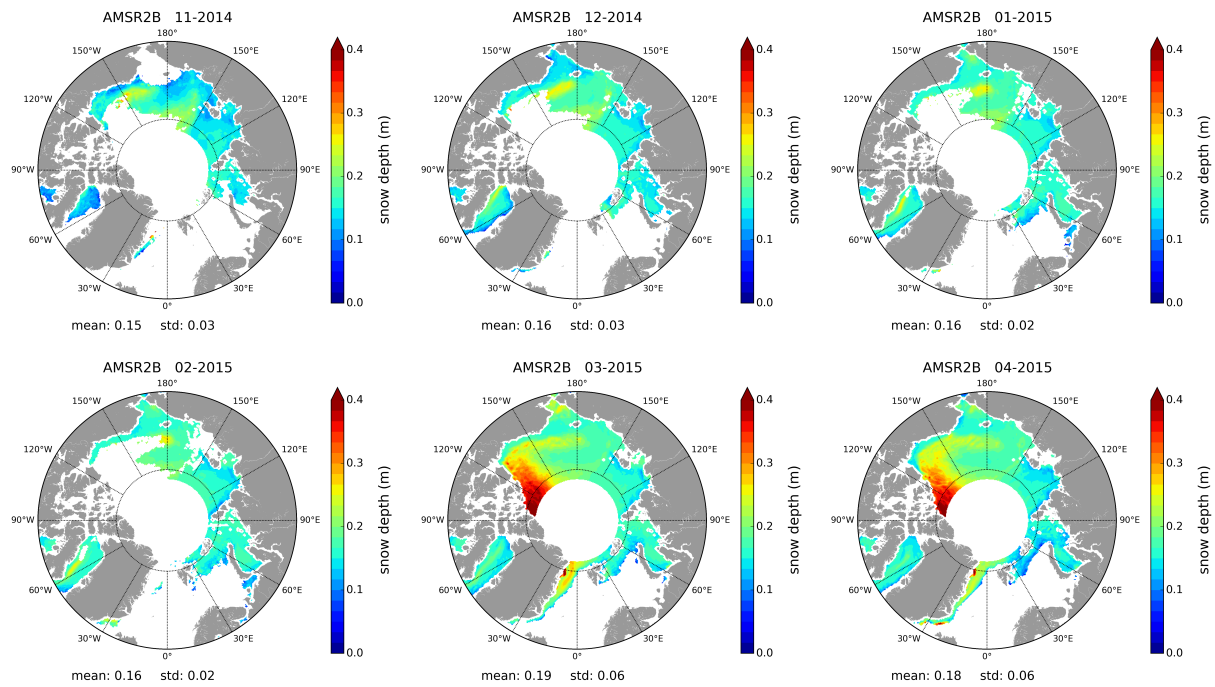
Figure S3. AMSR2B monthly mean snow depth maps for the six Arctic winters 2014-2015.
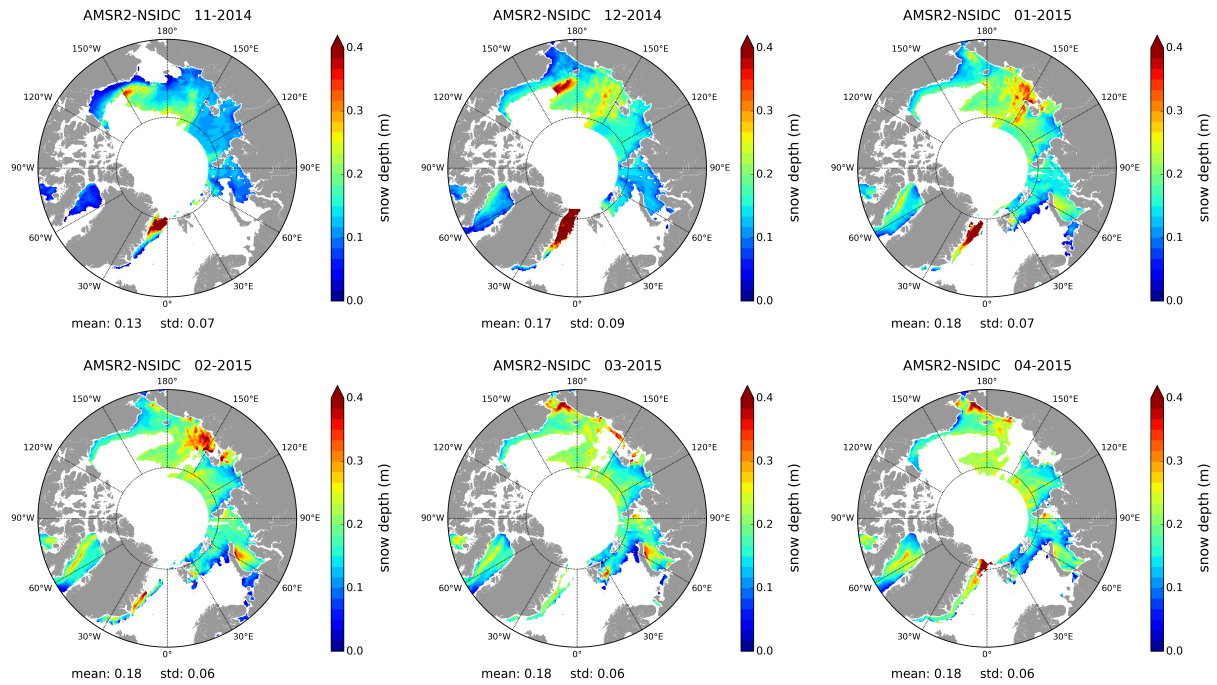
Figure S4. AMSR2-NSIDC monthly mean snow depth maps for the six Arctic winters 2014-2015.
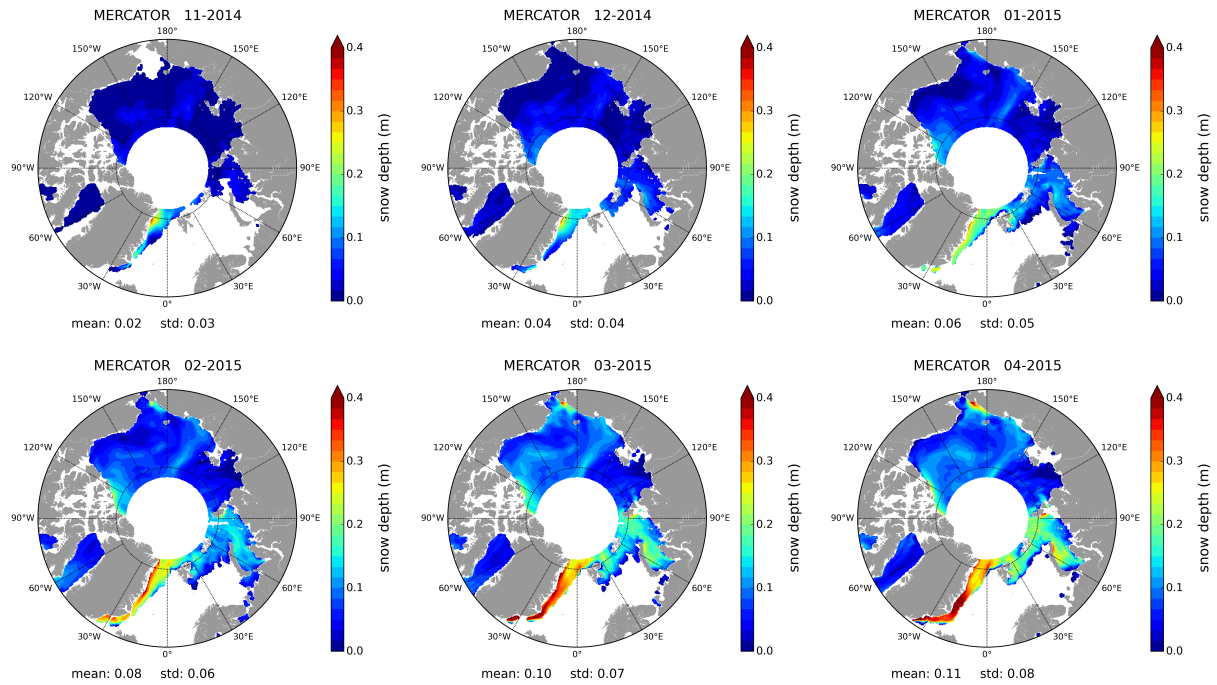
Figure S5. MERCATOR monthly mean snow depth maps for the six Arctic winters 2014-2015.
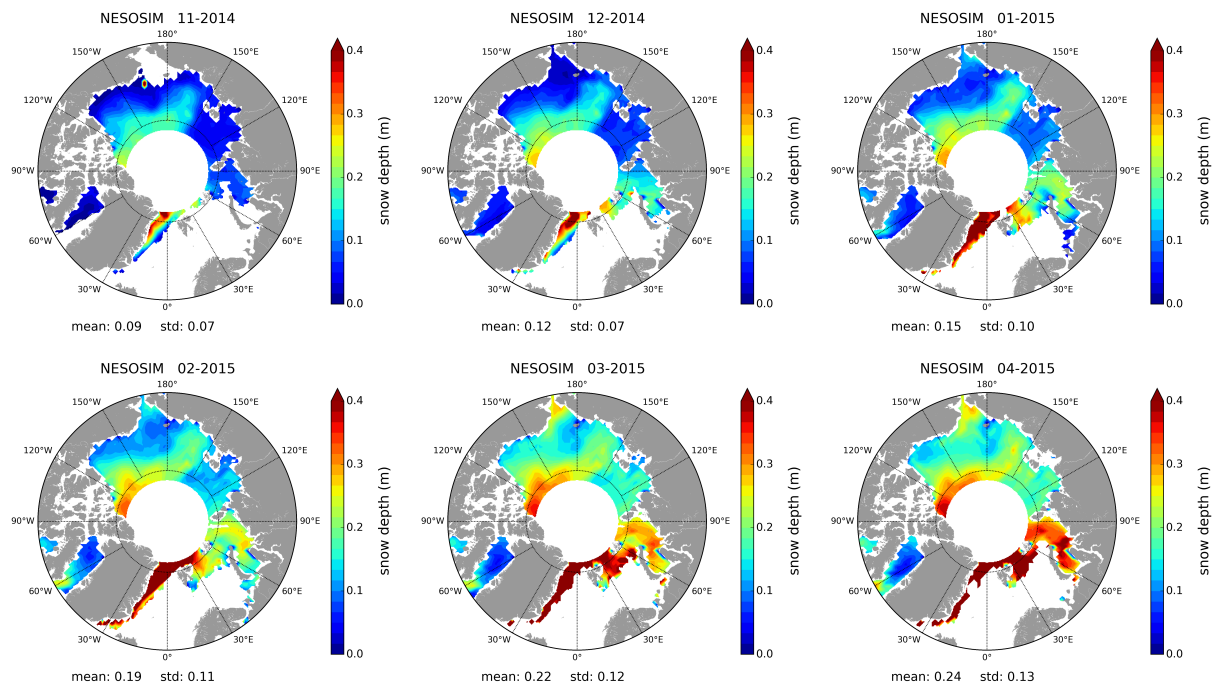
Figure S6. NESOSIM monthly mean snow depth maps for the six Arctic winters 2014-2015.
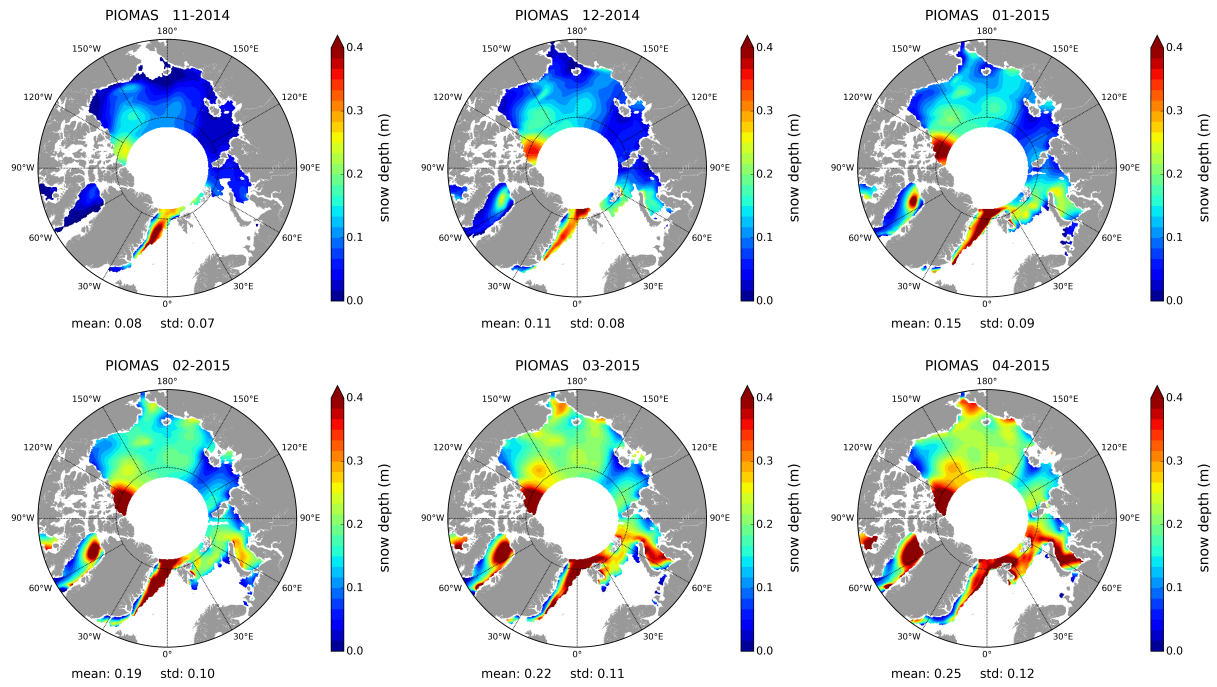
Figure S7. PIOMAS monthly mean snow depth maps for the six Arctic winters 2014-2015.
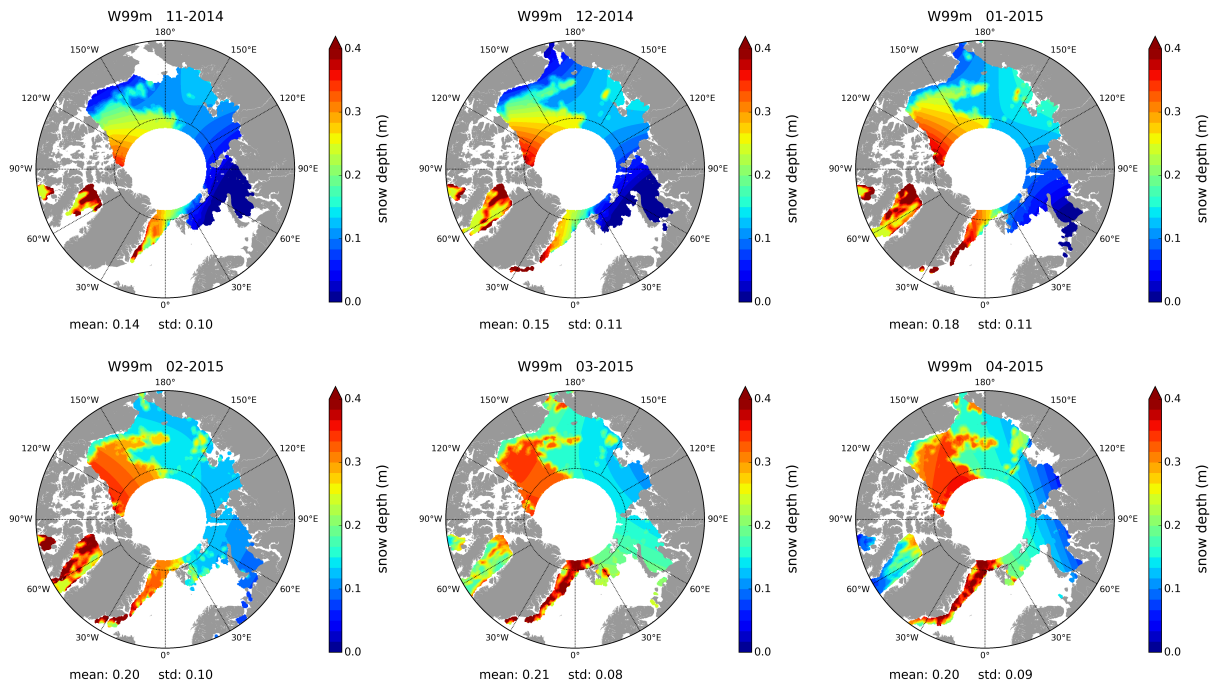
Figure S8. W99m monthly mean snow depth maps for the six Arctic winters 2014-2015.
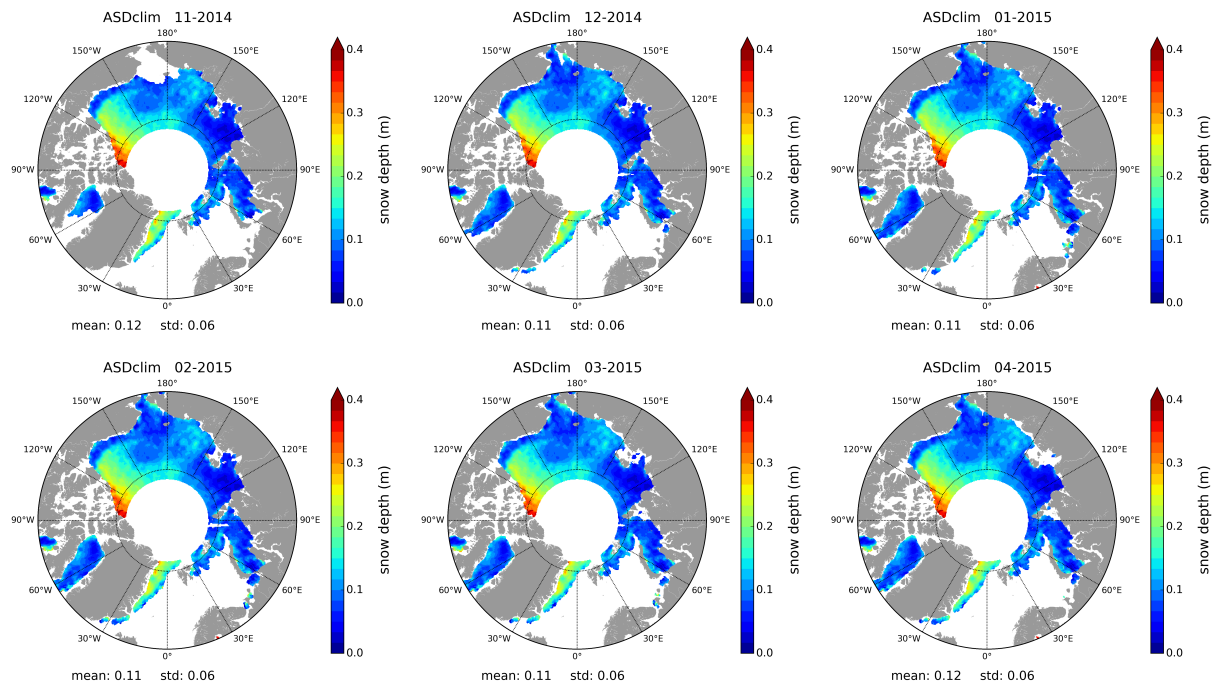
Figure S9. ASDclim monthly mean snow depth maps for the six Arctic winters 2014-2015.

2 Antarctic 2015 monthly snow depth maps
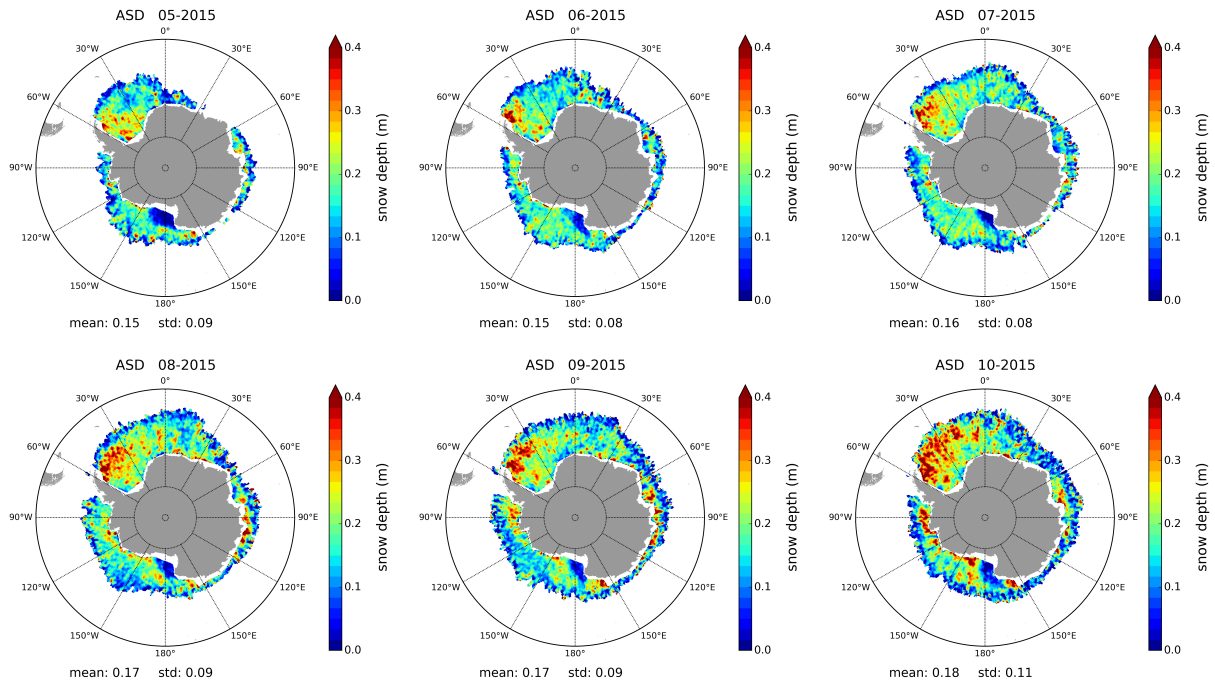
Figure S10. ASD monthly mean snow depth maps for the six Antarctic winters 2014-2015.
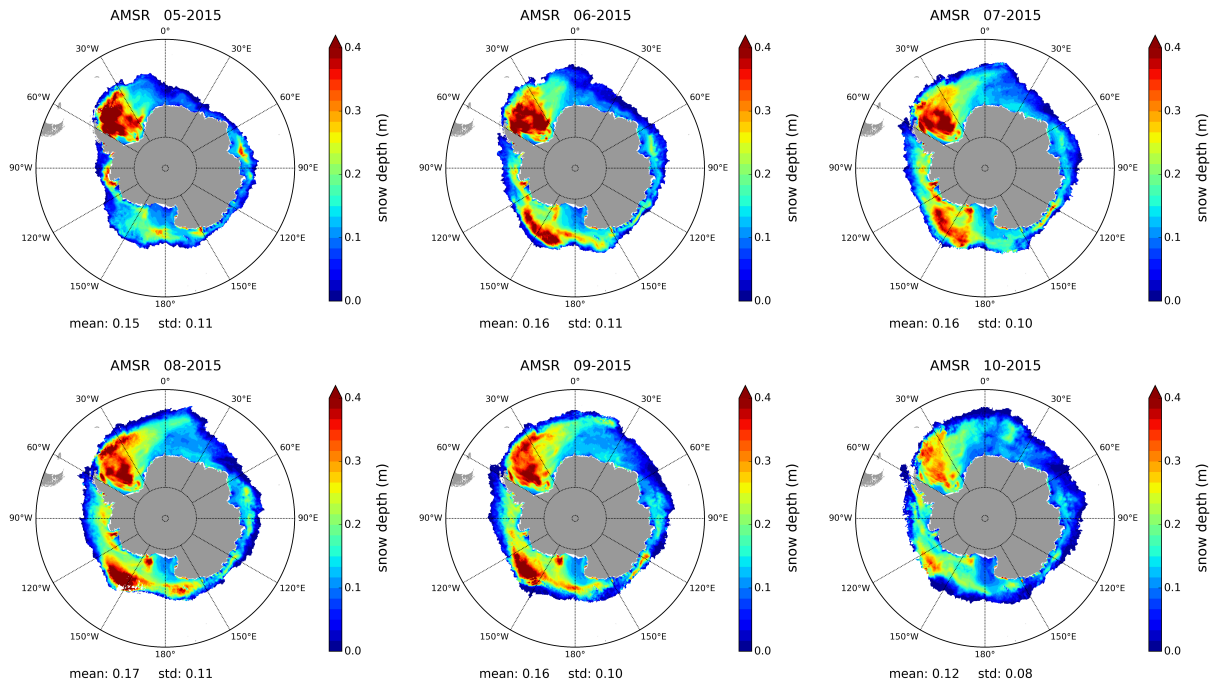
Figure S11. AMSR2-NSIDC monthly mean snow depth maps for the six Antarctic winters 2014-2015.
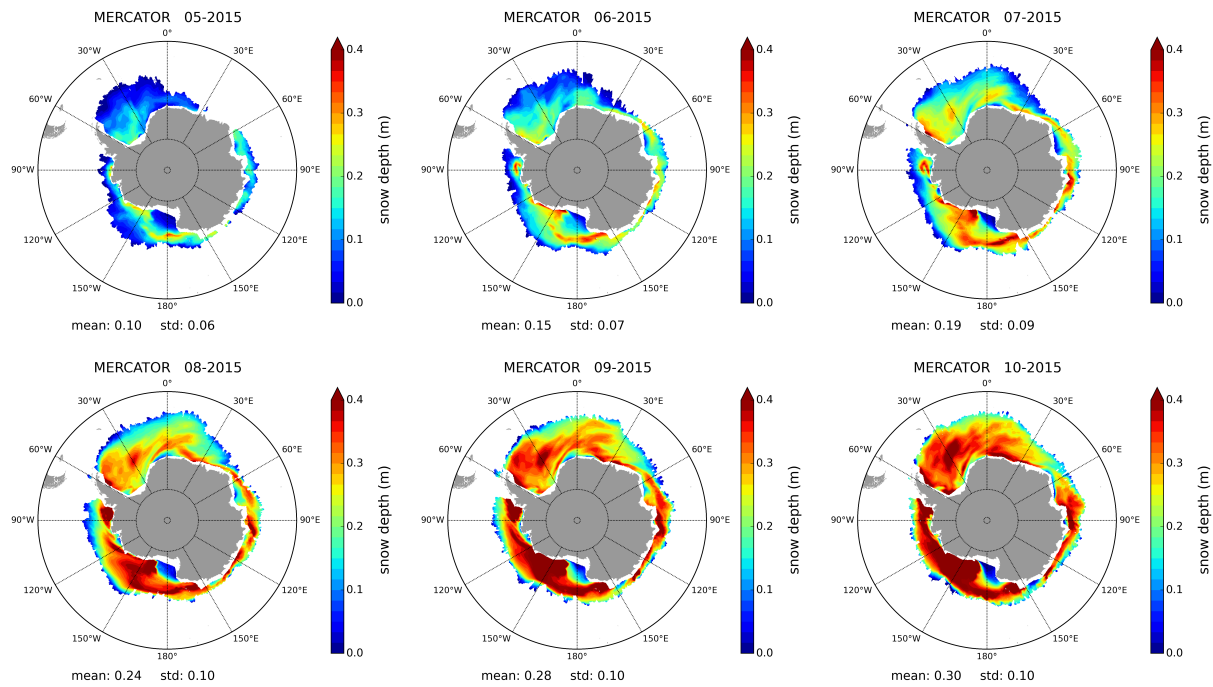
Figure S12. MERCATOR monthly mean snow depth maps for the six Antarctic winters 2014-2015.
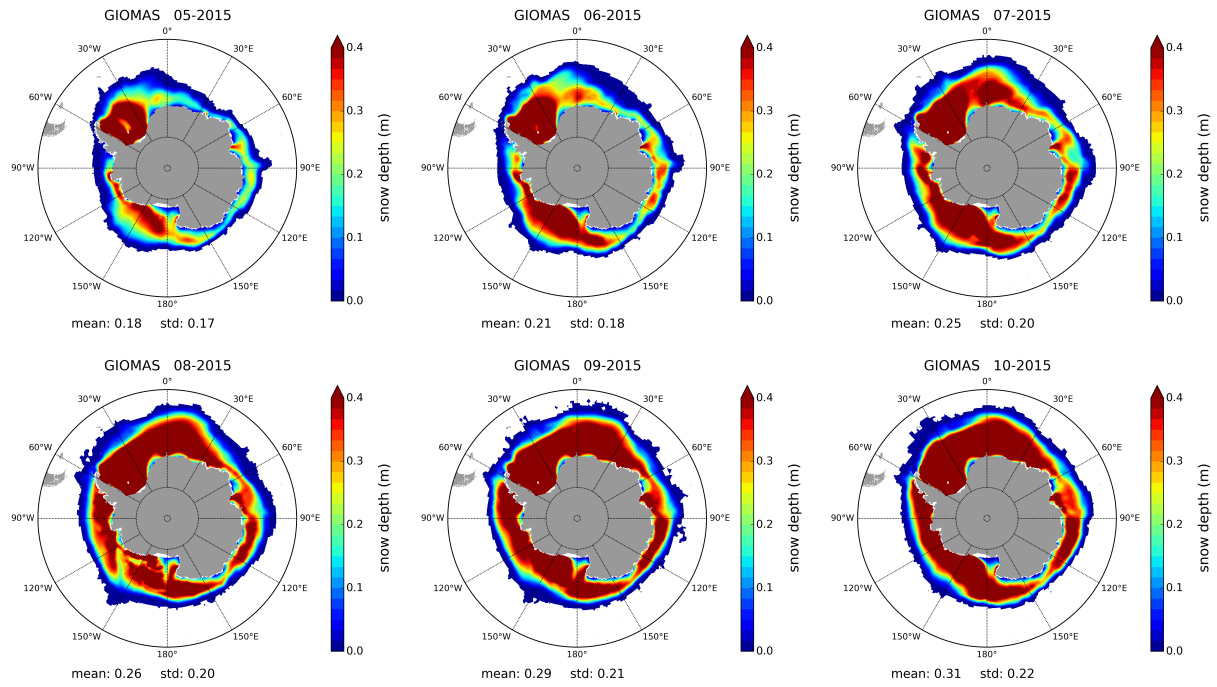
Figure S13. GIOMAS monthly mean snow depth maps for the six Antarctic winters 2014-2015.

3 Along track comparison with OIB
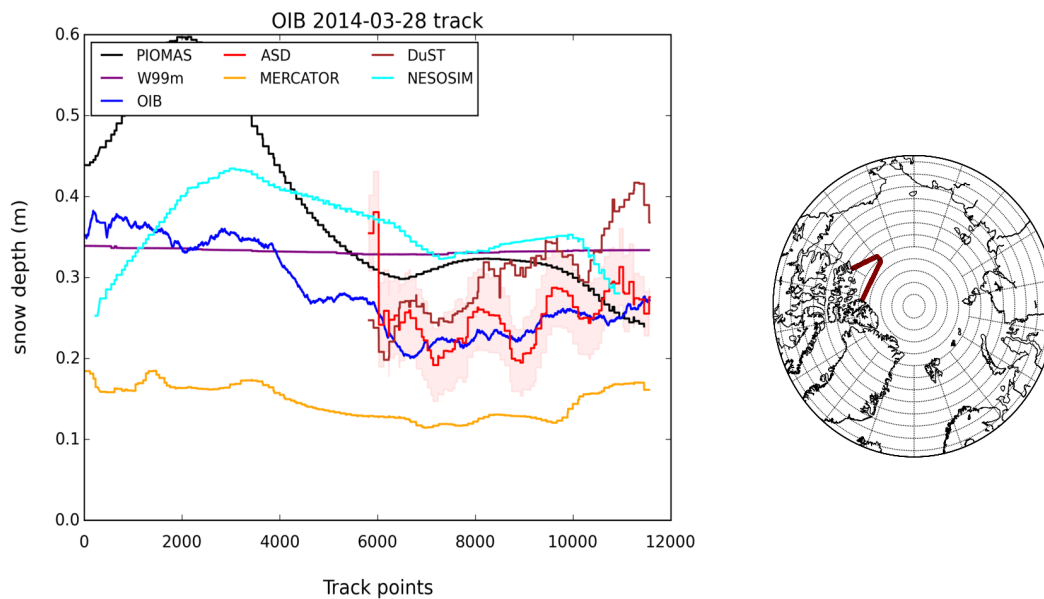
Figure S14. Along track comparison between the snow depth products and the OIB snow radar data during the 28th March 2014 campaign in the Arctic. The red envelope refers to the ASD uncertainties. The Map specify the geographical location of this OIB track.
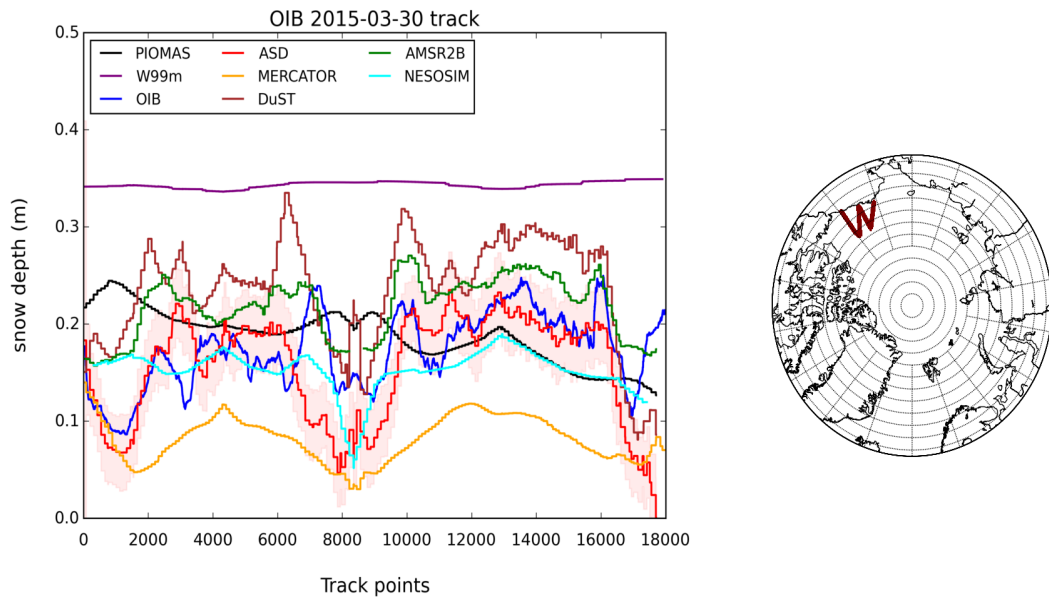
Figure S15. Along track comparison between the snow depth products and the OIB snow radar data during the 30th March 2015 campaign in the Arctic. The red envelope refers to the ASD uncertainties. The Map specify the geographical location of this OIB track.
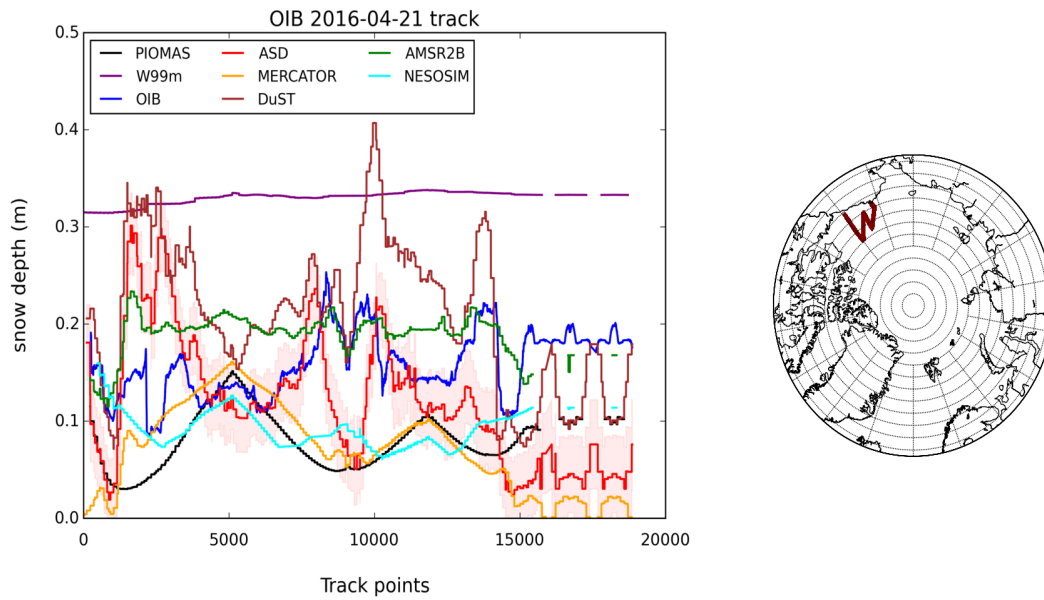
Figure S16. Along track comparison between the snow depth products and the OIB snow radar data during the 21st April 2016 campaign in the Arctic. The red envelope refers to the ASD uncertainties. The Map specify the geographical location of this OIB track.
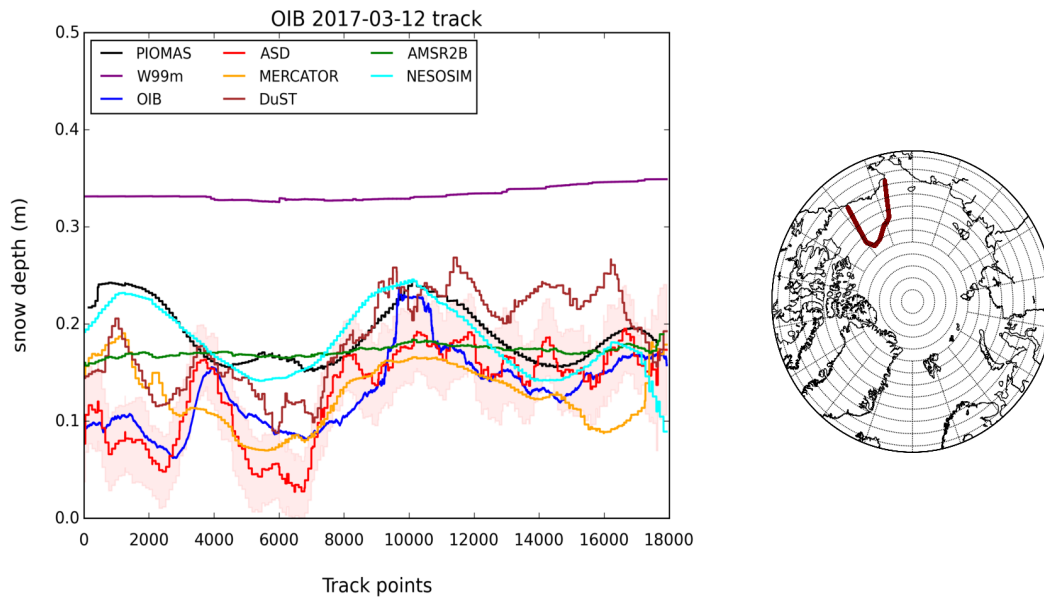
Figure S17. Along track comparison between the snow depth products and the OIB snow radar data during the 3rd March 2017 campaign in the Arctic. The red envelope refers to the ASD uncertainties. The Map specify the geographical location of this OIB track.

4 Arctic 2015 SIT maps
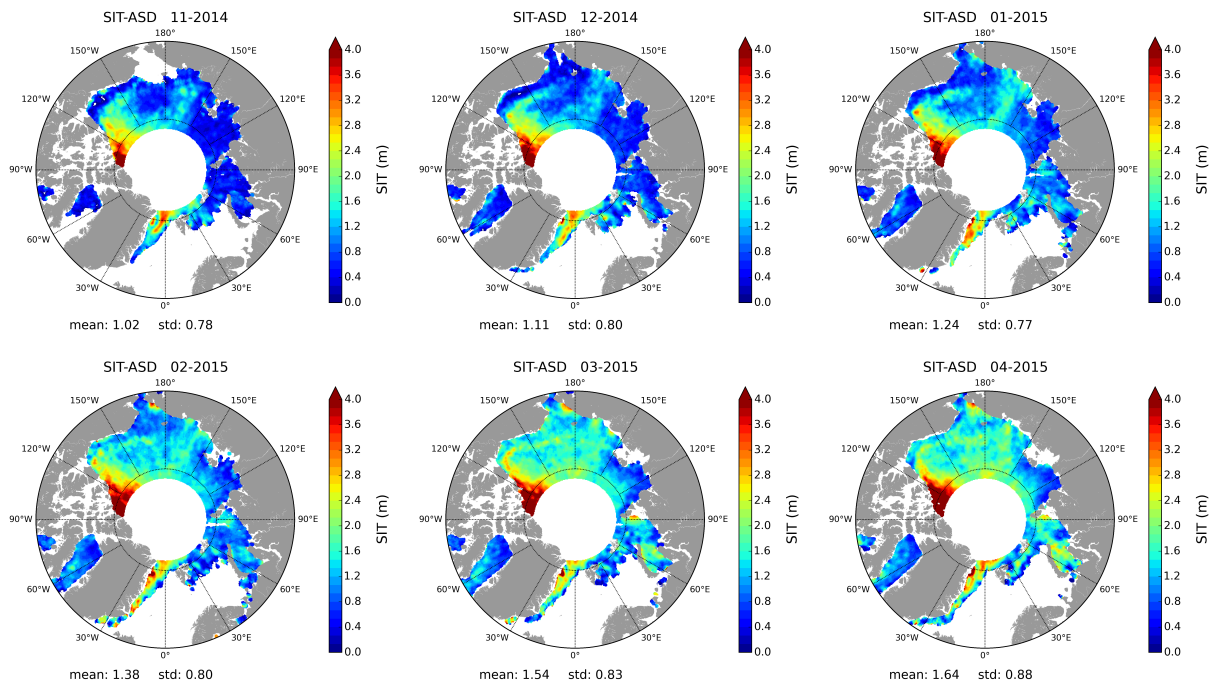
Figure S18. SIT monthly mean maps calculated with the ASD snow depth data for the six Arctic winters 2014-2015.
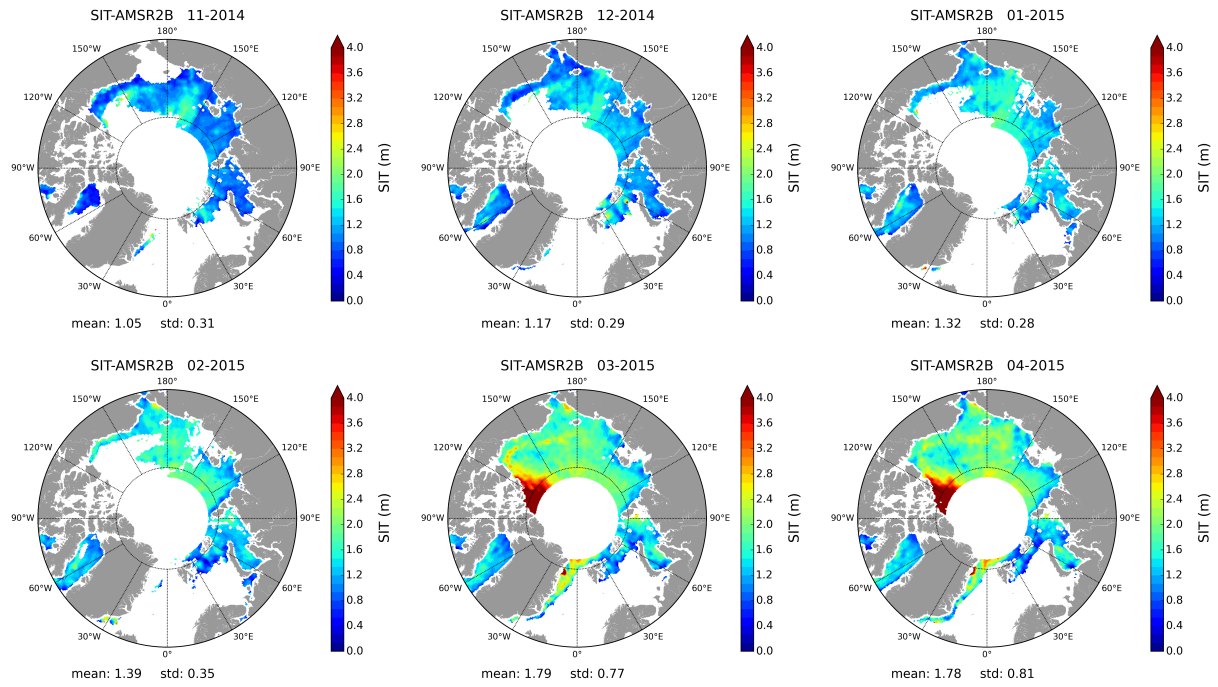
Figure S19. SIT monthly mean maps calculated with the AMSR2B snow depth data for the six Arctic winters 2014-2015.
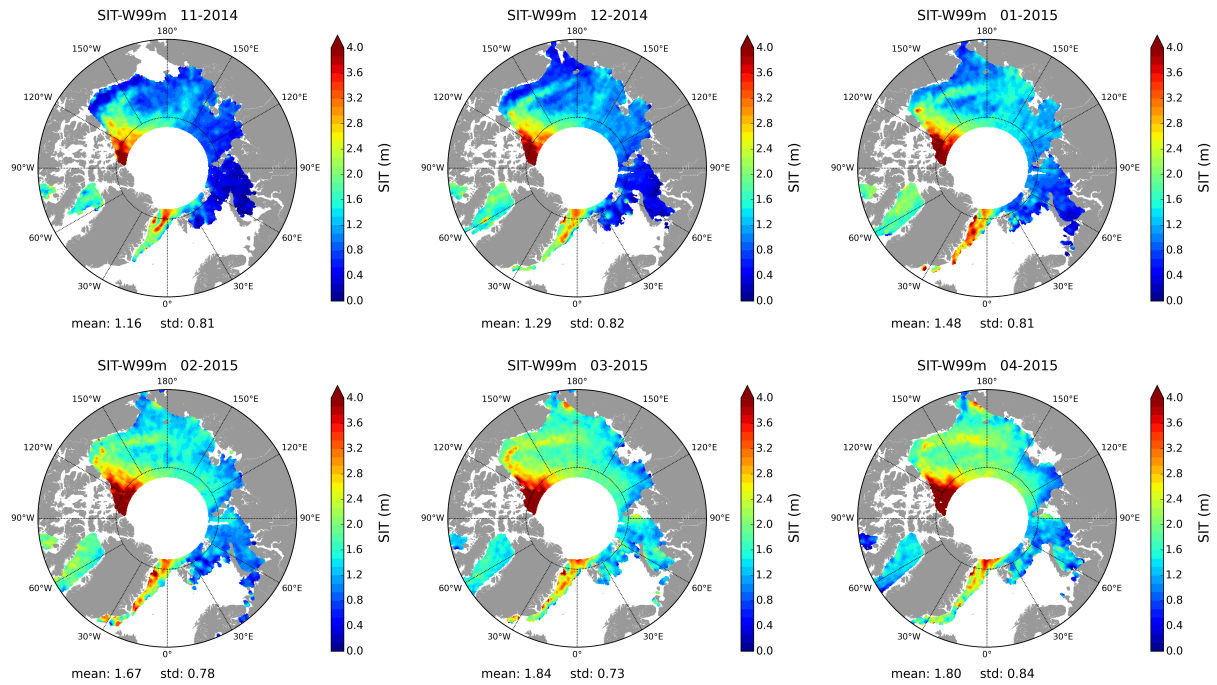
Figure S20. SIT monthly mean maps calculated with the W99m snow depth data for the six Arctic winters 2014-2015.
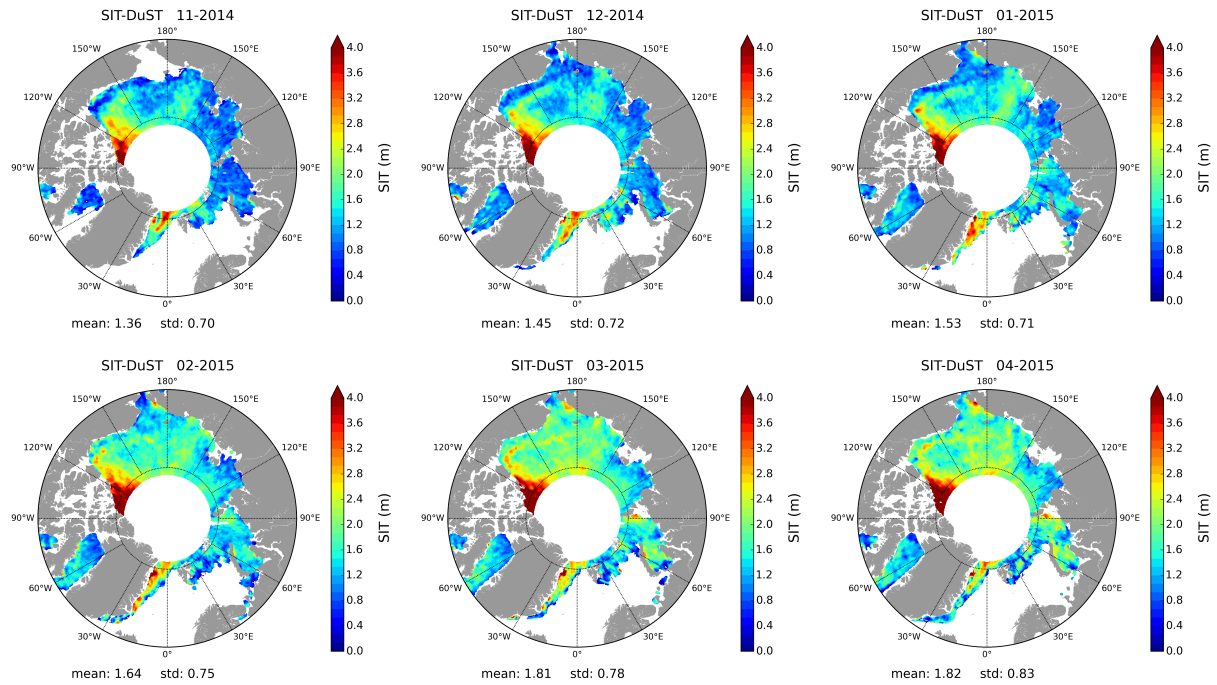
Figure S21. SIT monthly mean maps calculated with the DuST snow depth data for the six Arctic winters 2014-2015.
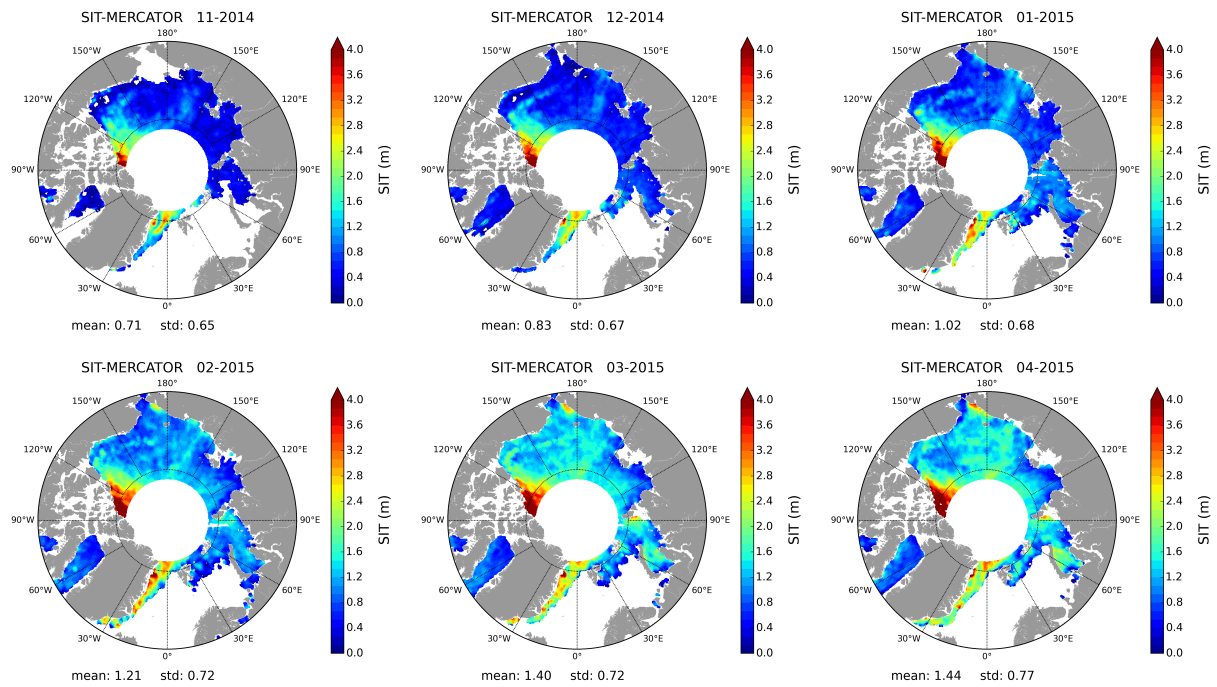
Figure S22. SIT monthly mean maps calculated with the MERCATOR snow depth data for the six Arctic winters 2014-2015.
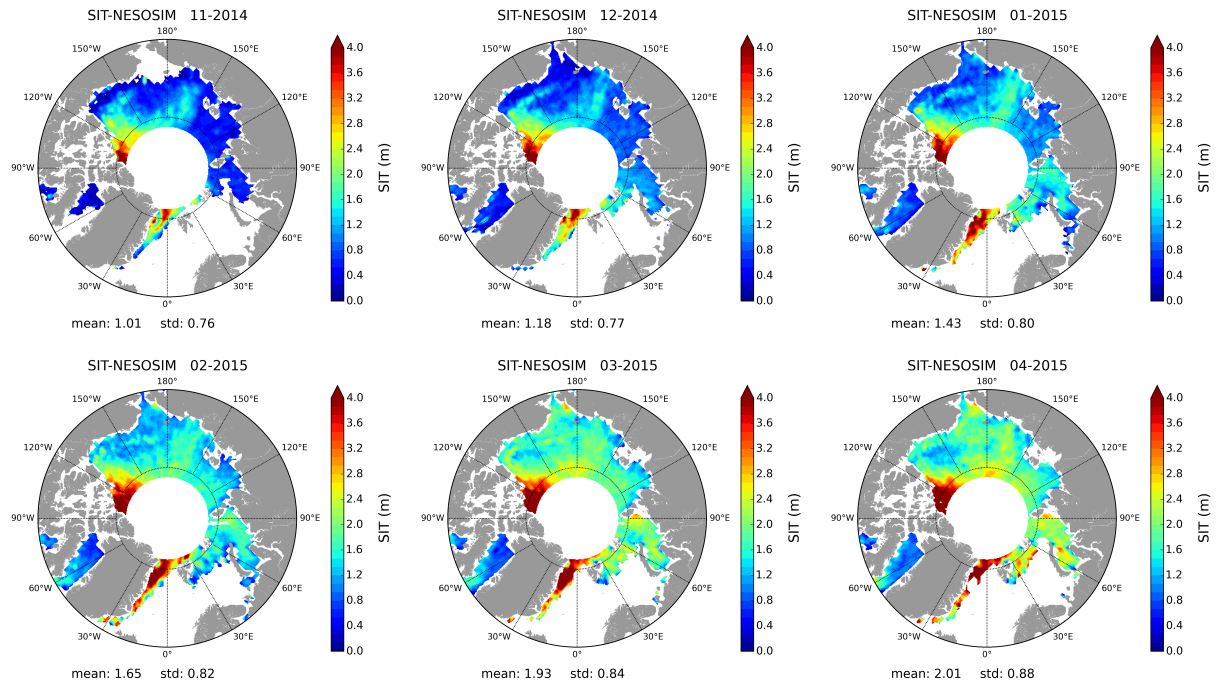
Figure S23. SIT monthly mean maps calculated with the NESOSIM snow depth data for the six Arctic winters 2014-2015.
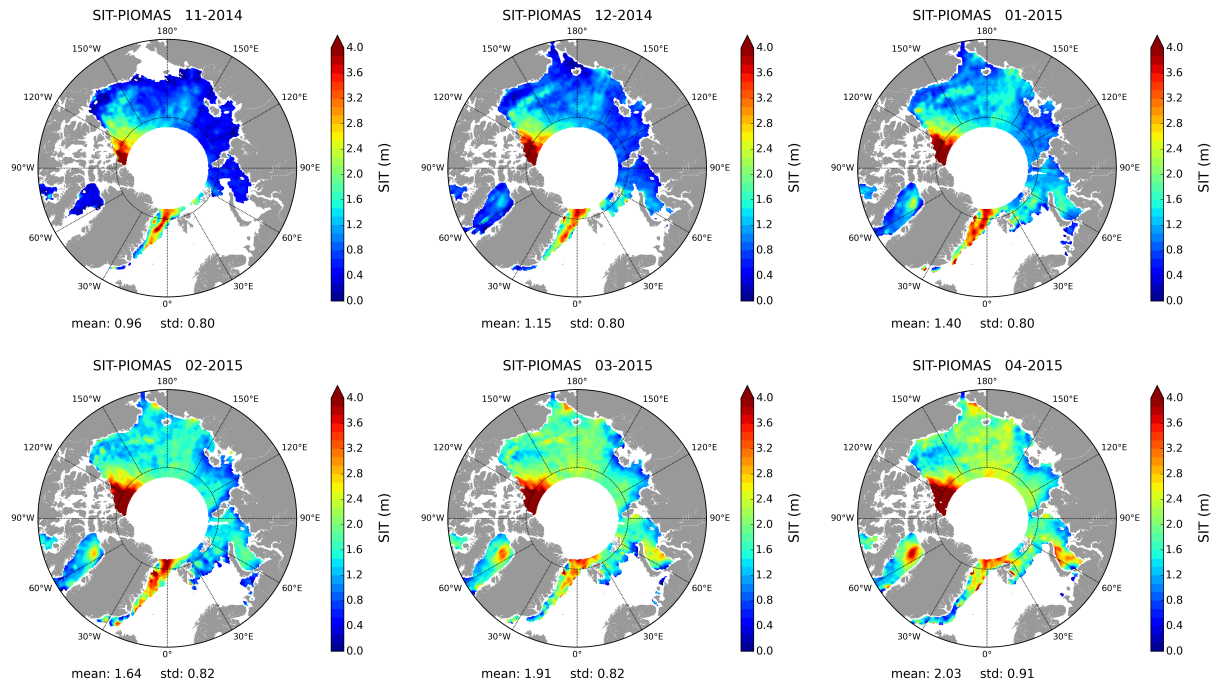
Figure S24. SIT monthly mean maps calculated with the PIOMAS snow depth data for the six Arctic winters 2014-2015.
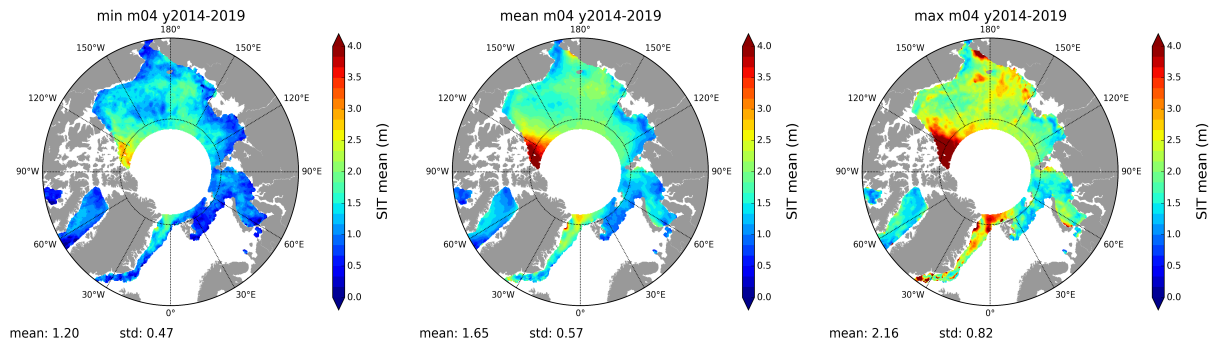
Figure S25. SIT climatological minimum (left), mean (center) and maximum (right) maps calculated in April considering the snow depth observation products between 2014 and 2019 (case « obs snow products » : W99m, DuST, AMSR2B, and ASD).