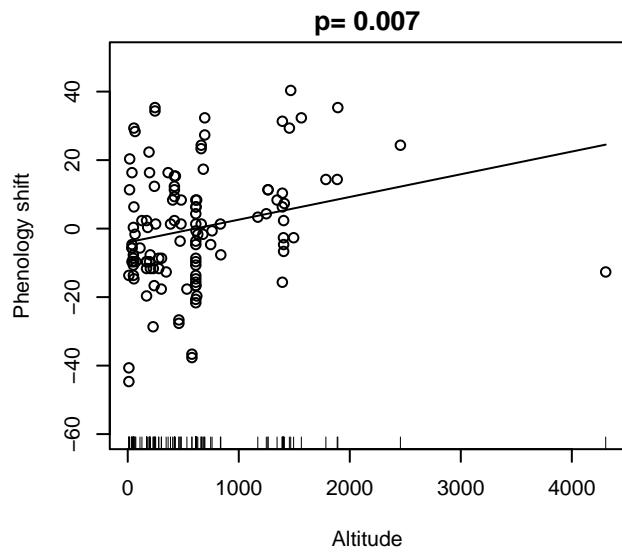
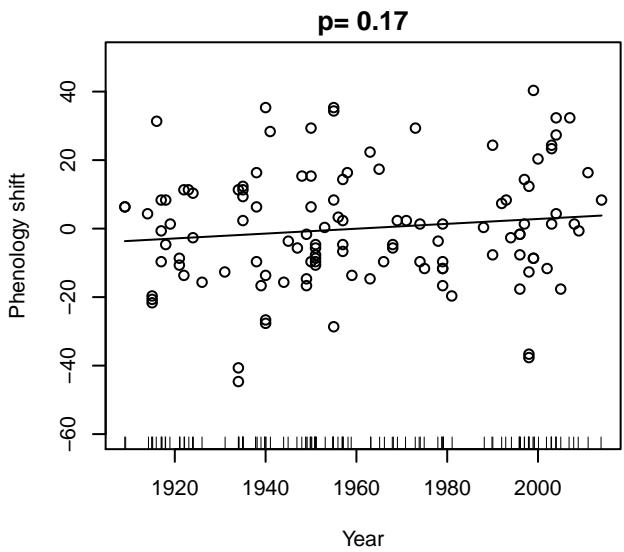
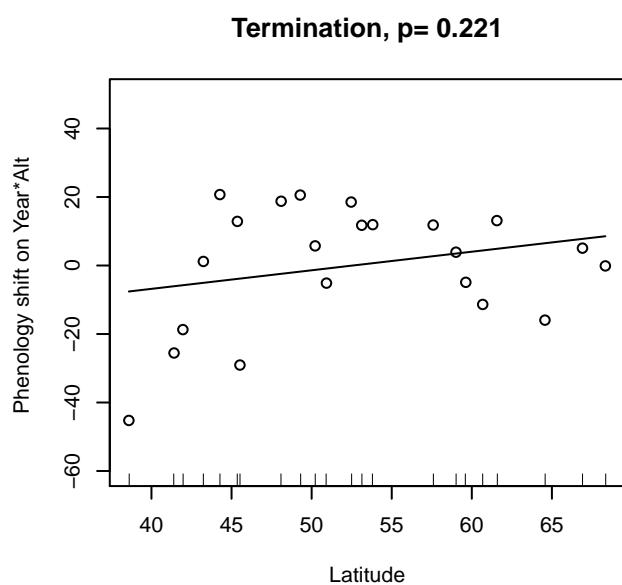
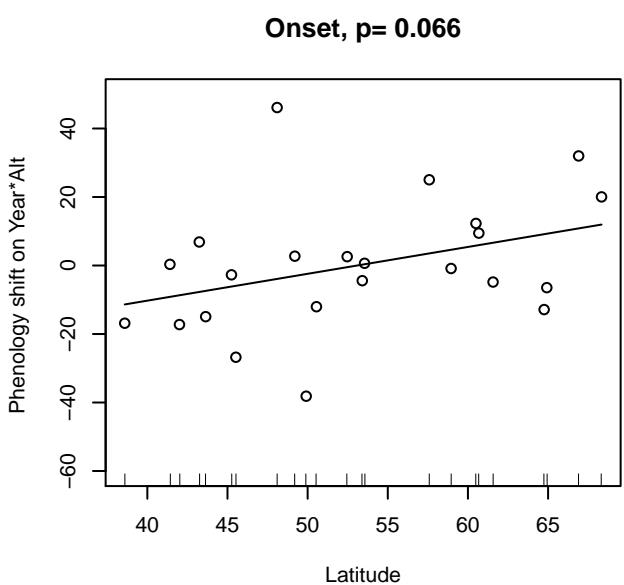
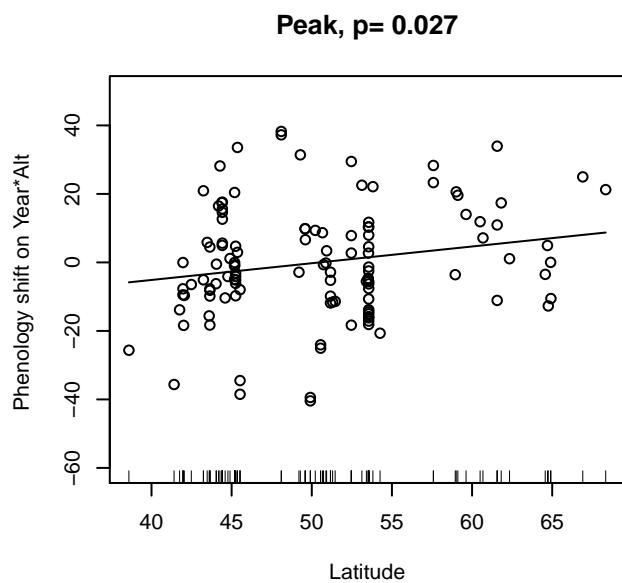
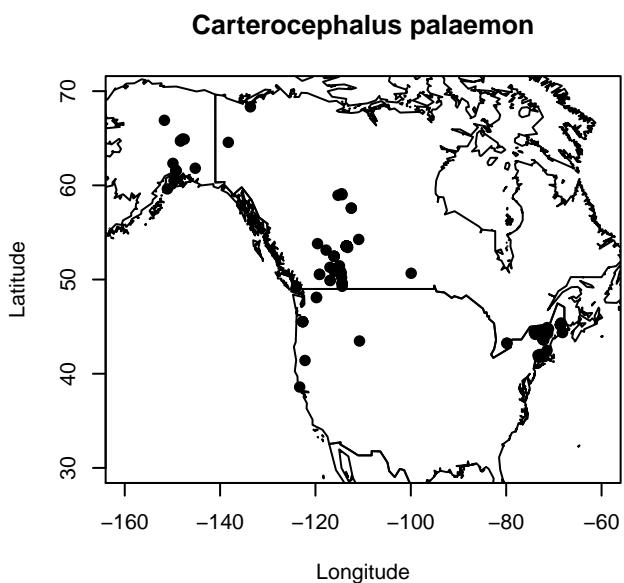
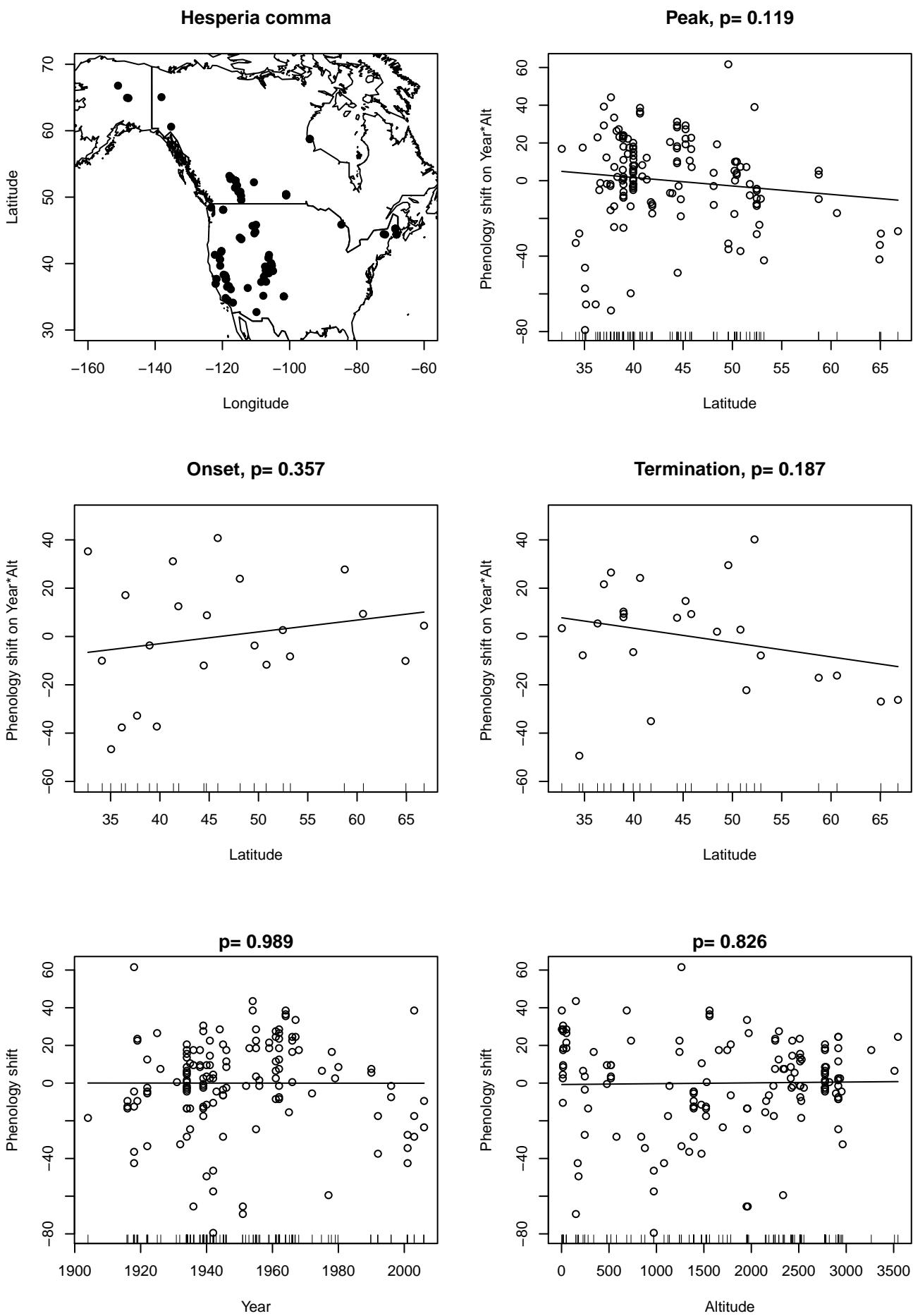
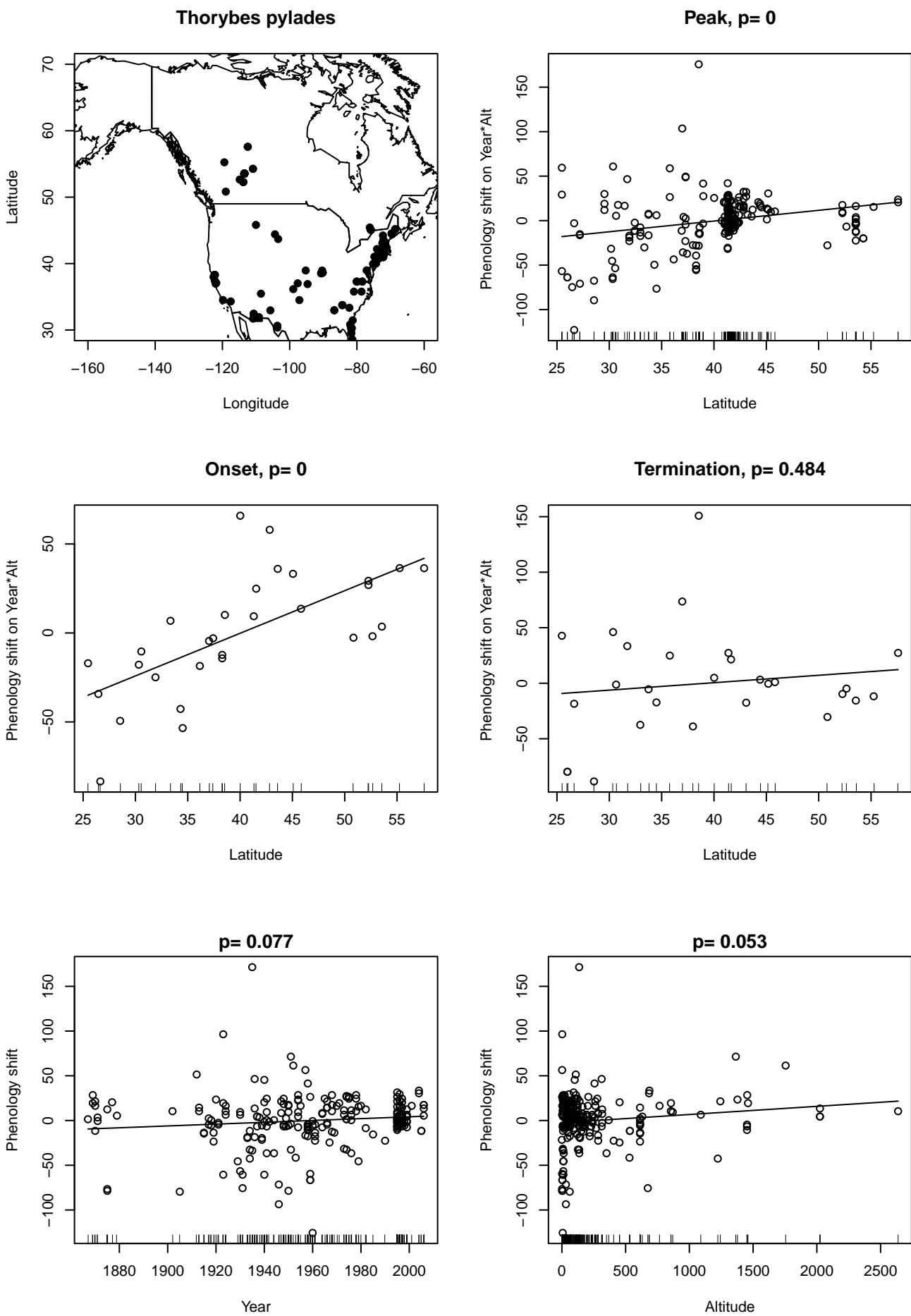
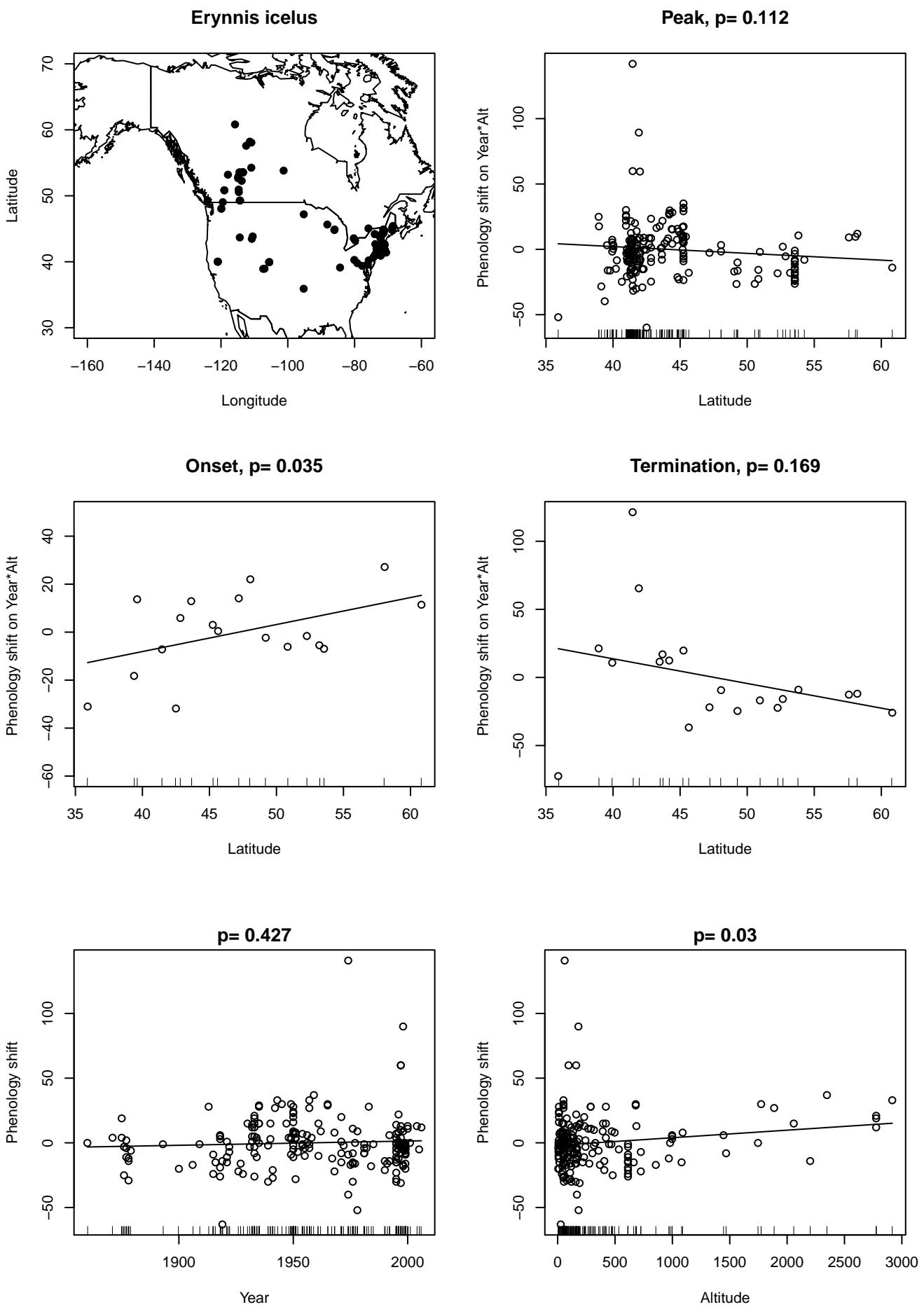


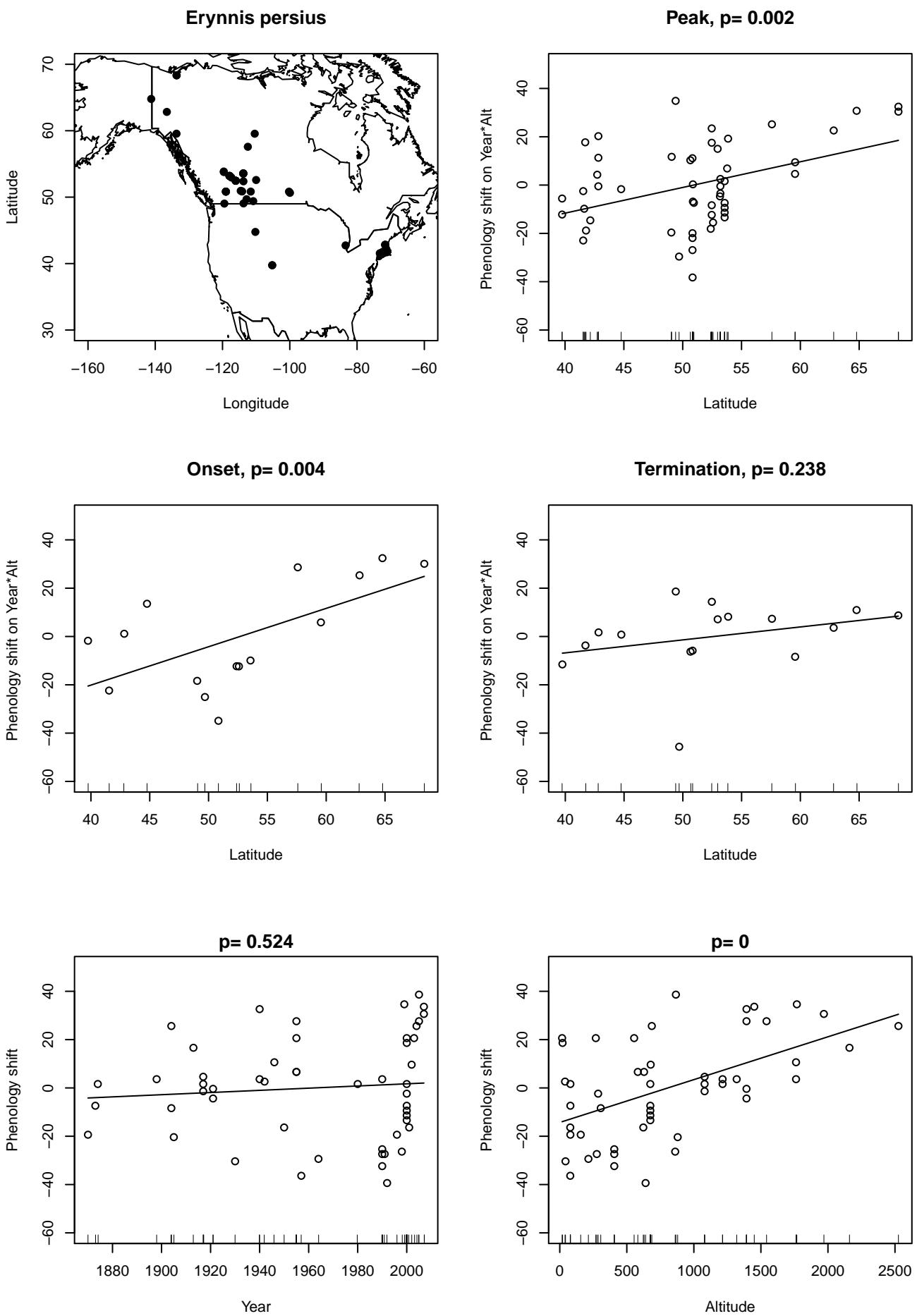
**Supplementary Fig. 1.** Maps of retrieved GBIF records used to regress Northern temperate zone single brooded butterflies' phenology patterns against latitudes of the records, respective regression lines for peak (top row), onset and termination (middle row), and for year and altitude (bottom) for each of the 105 datasets. The latitude analyses are controlled for altitude and year, year analyse is controlled for latitude and altitude is controlled for year effects.

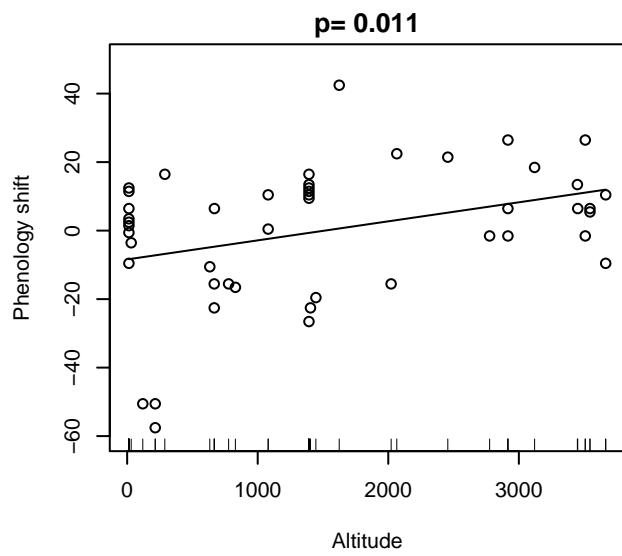
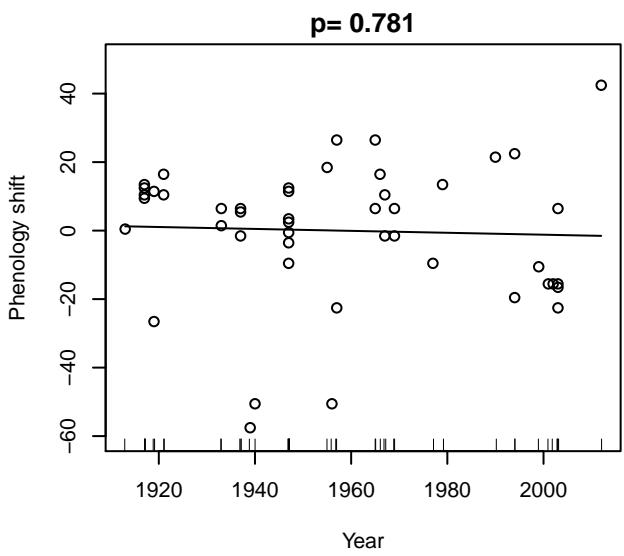
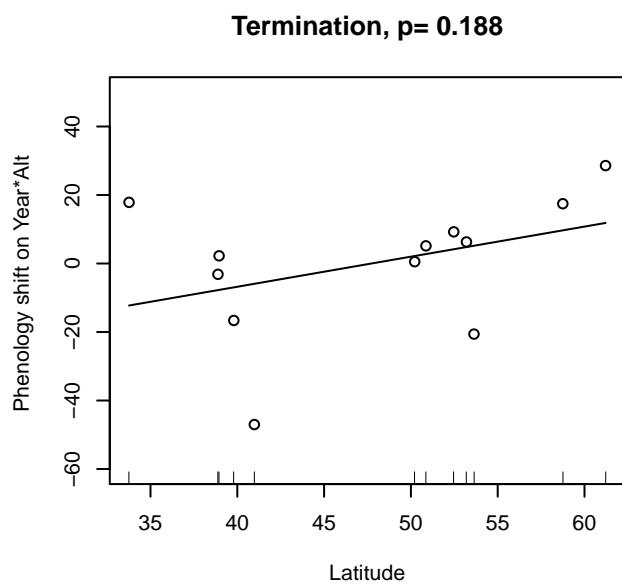
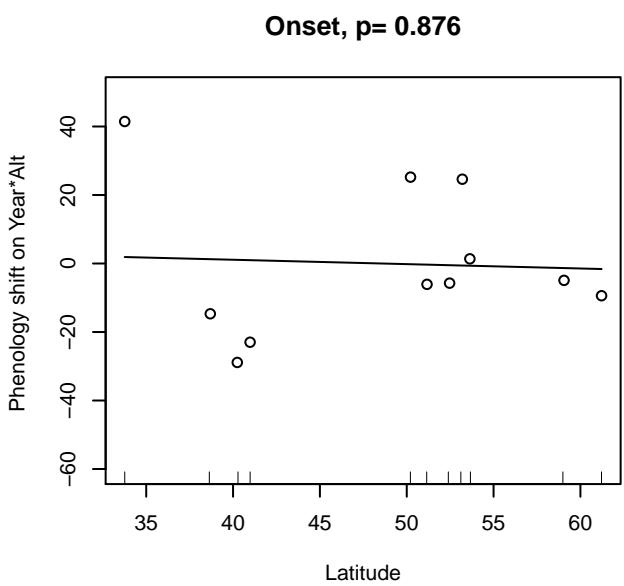
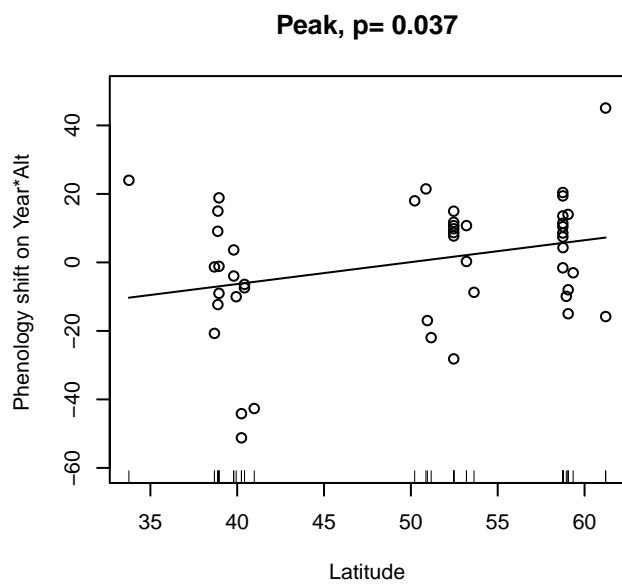
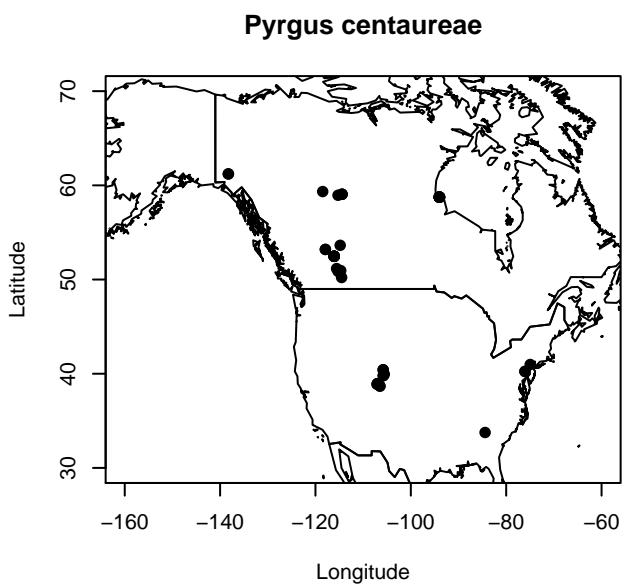


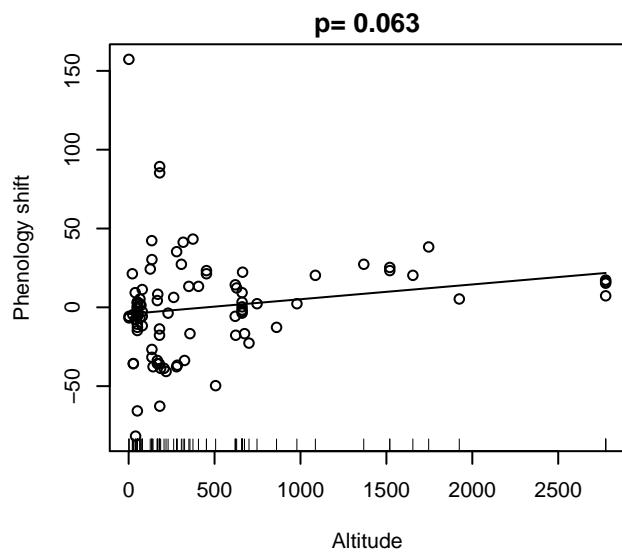
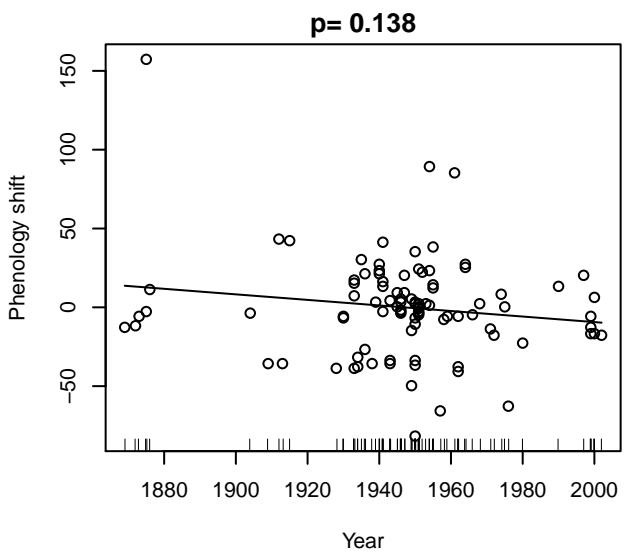
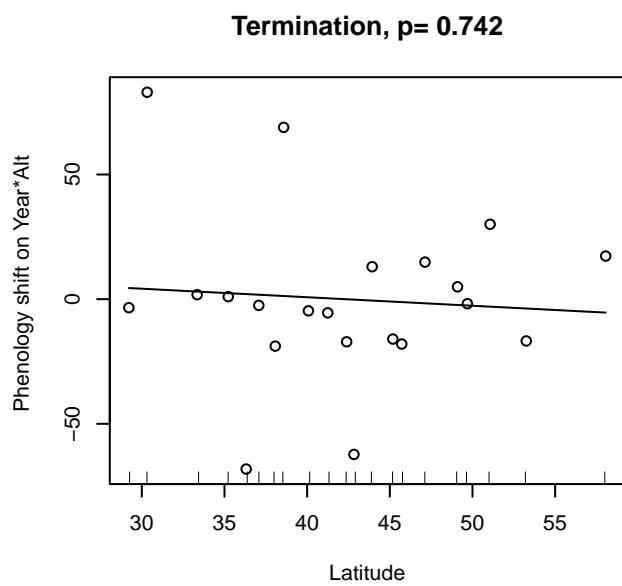
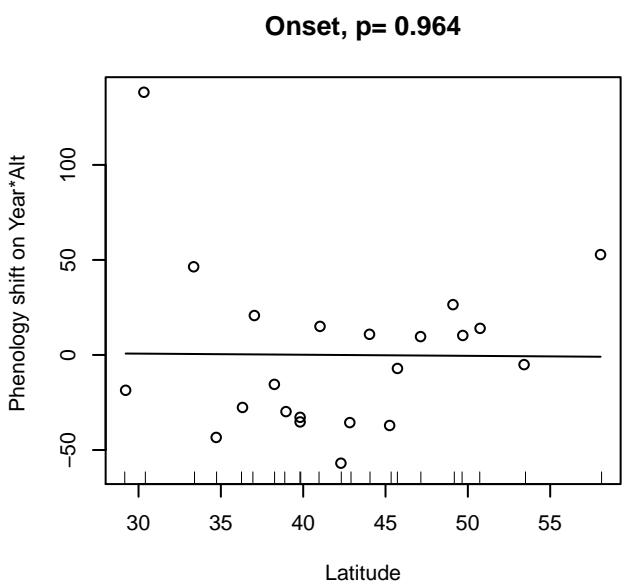
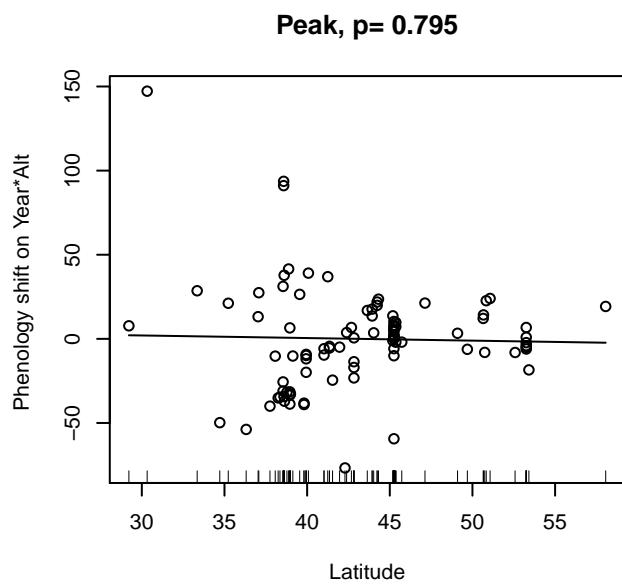
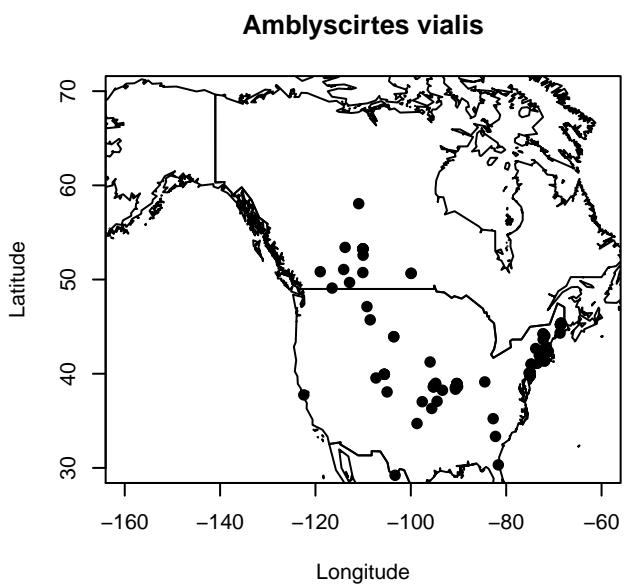




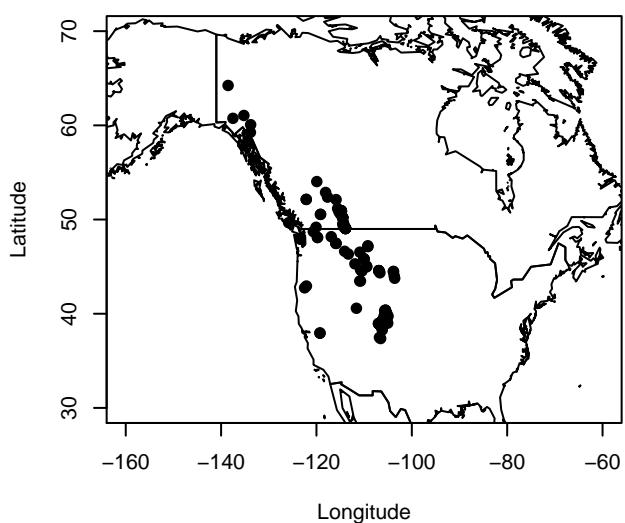




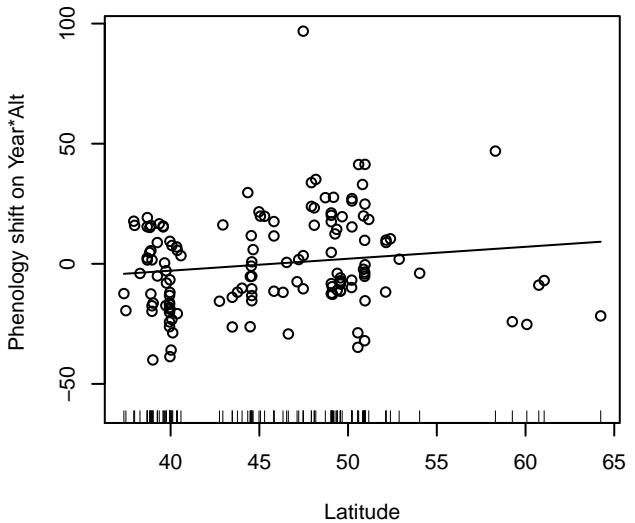




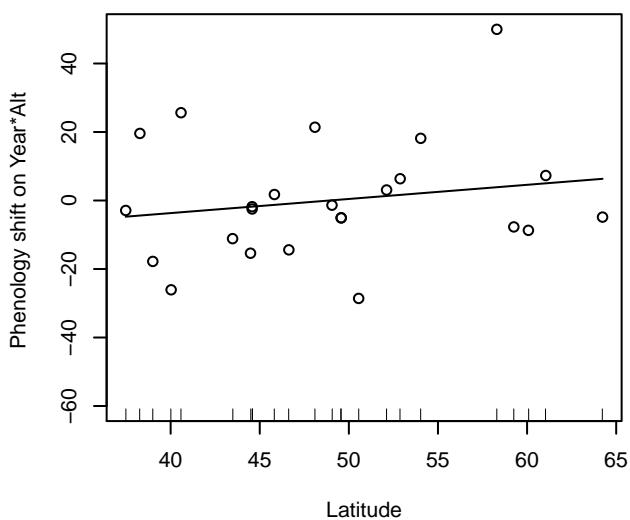
**Parnassius smintheus**



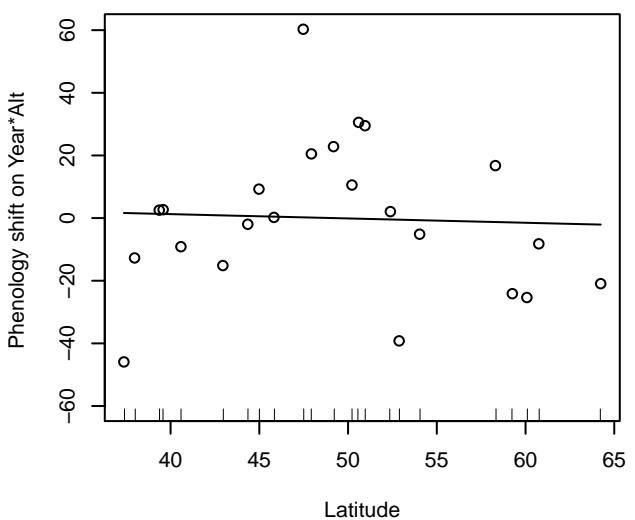
**Peak, p= 0.091**



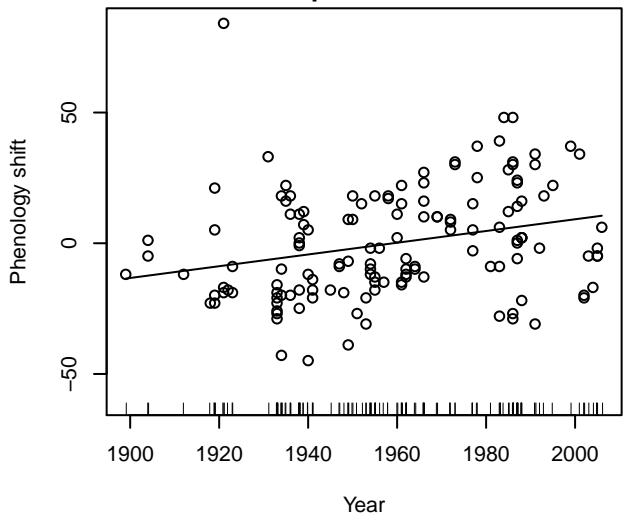
**Onset, p= 0.389**



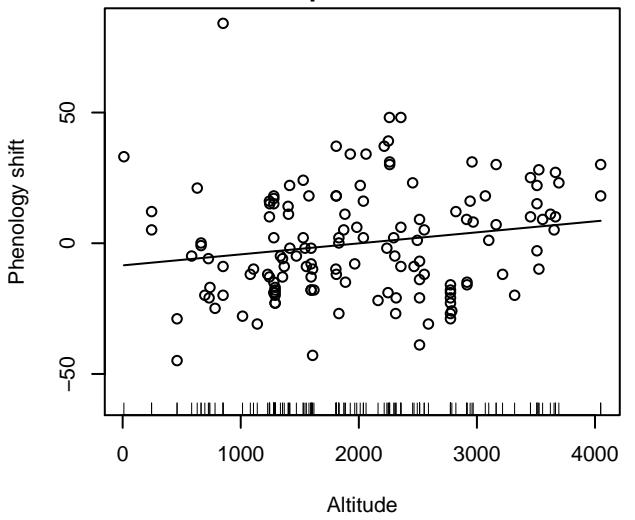
**Termination, p= 0.838**

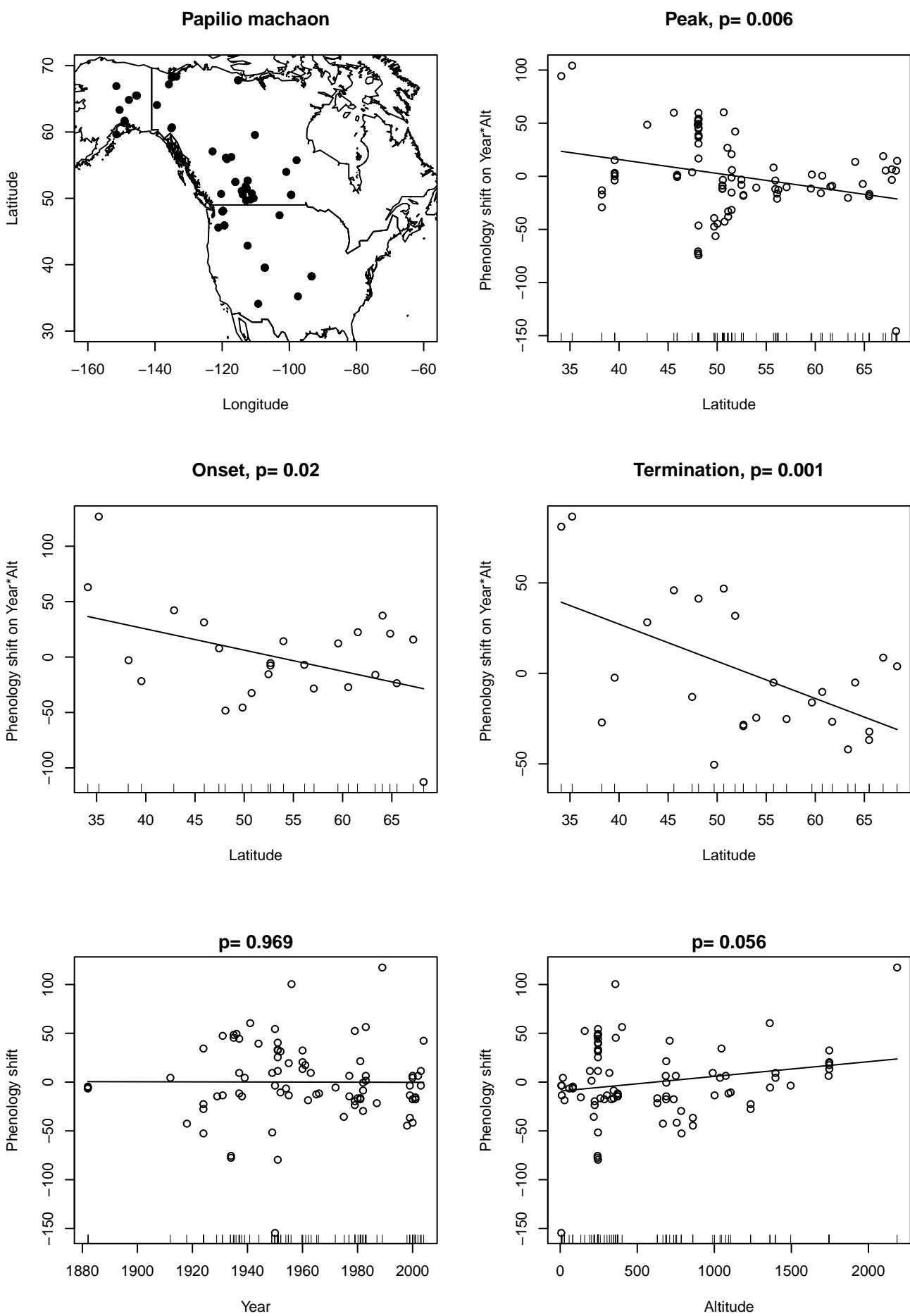


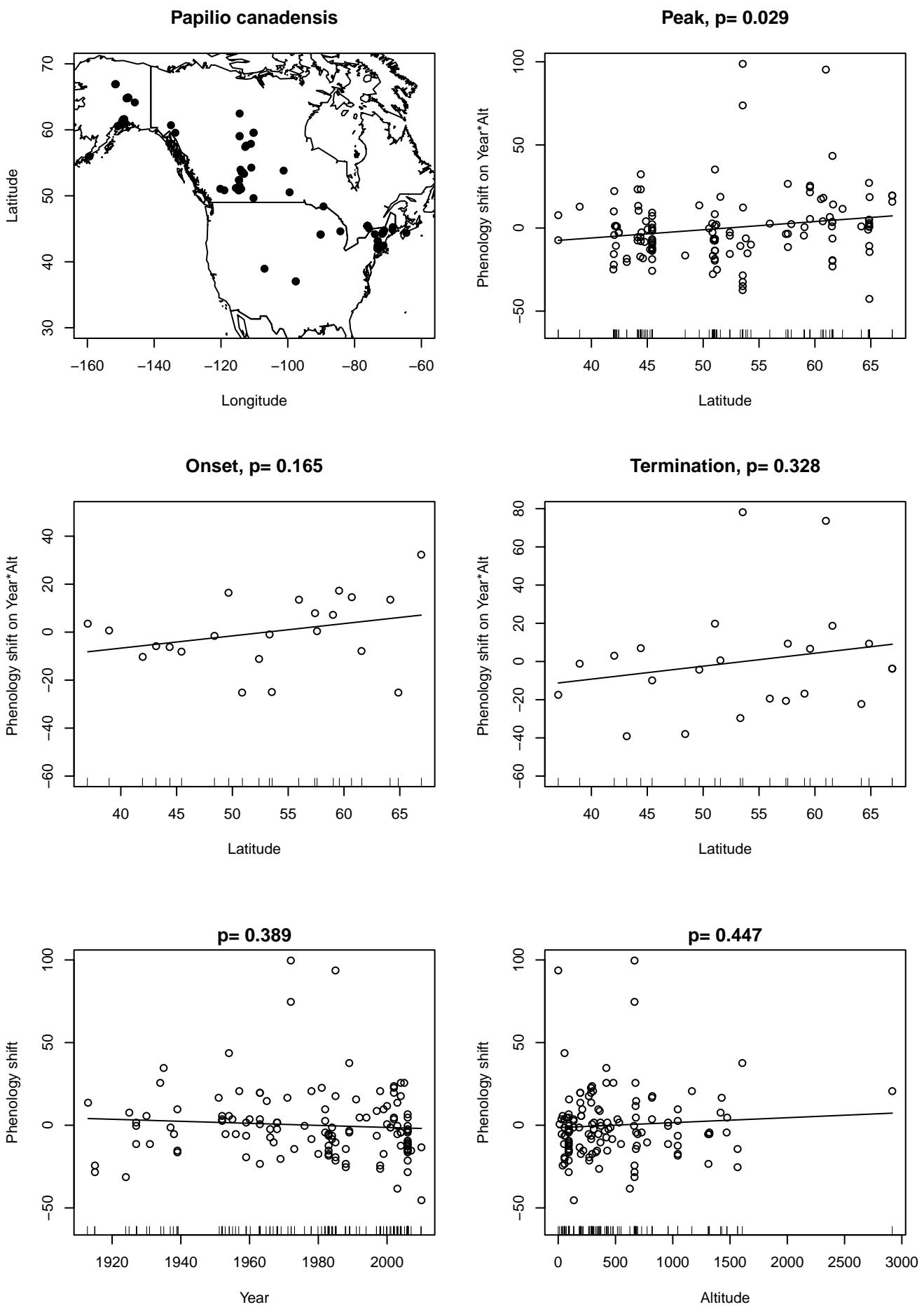
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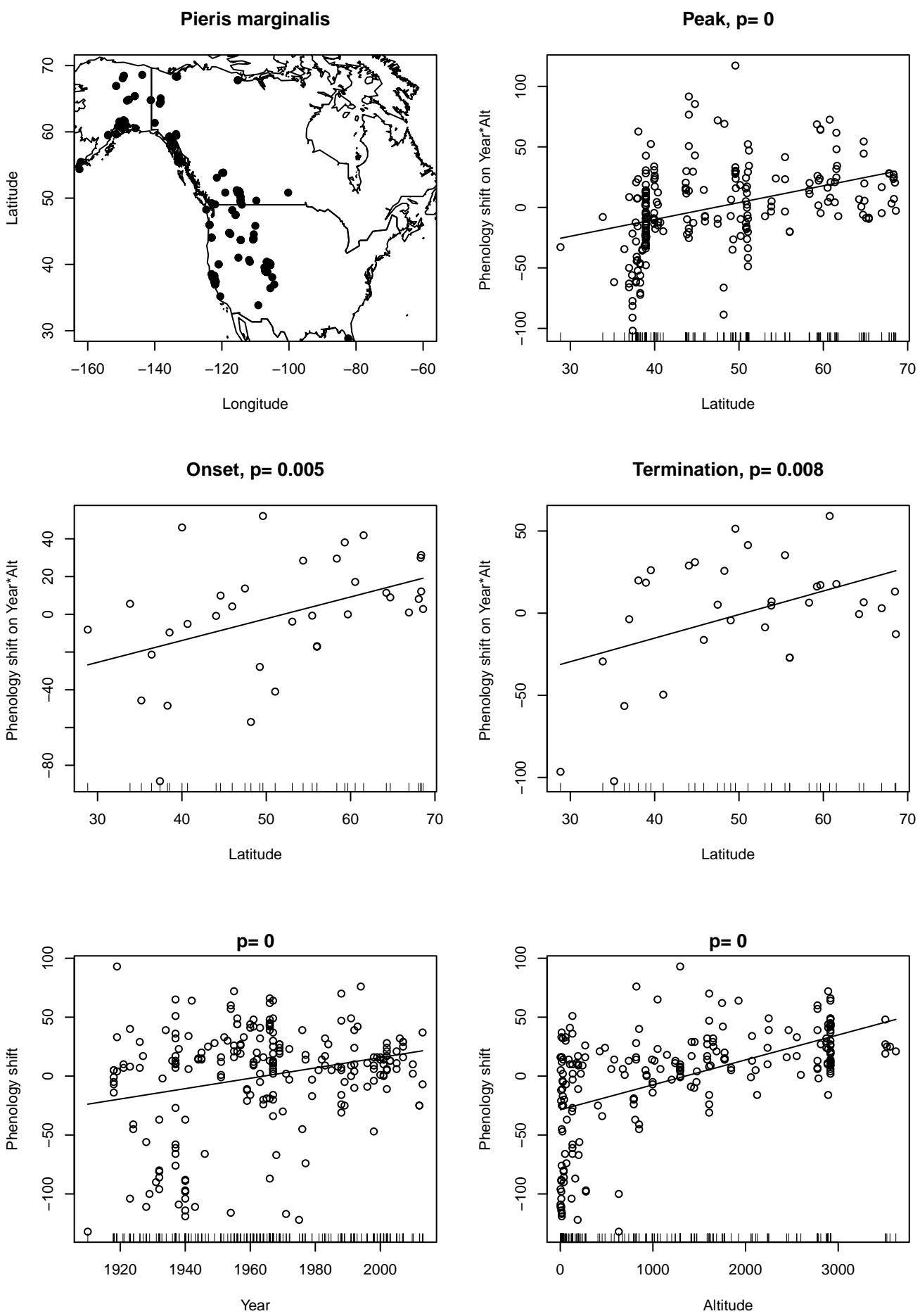


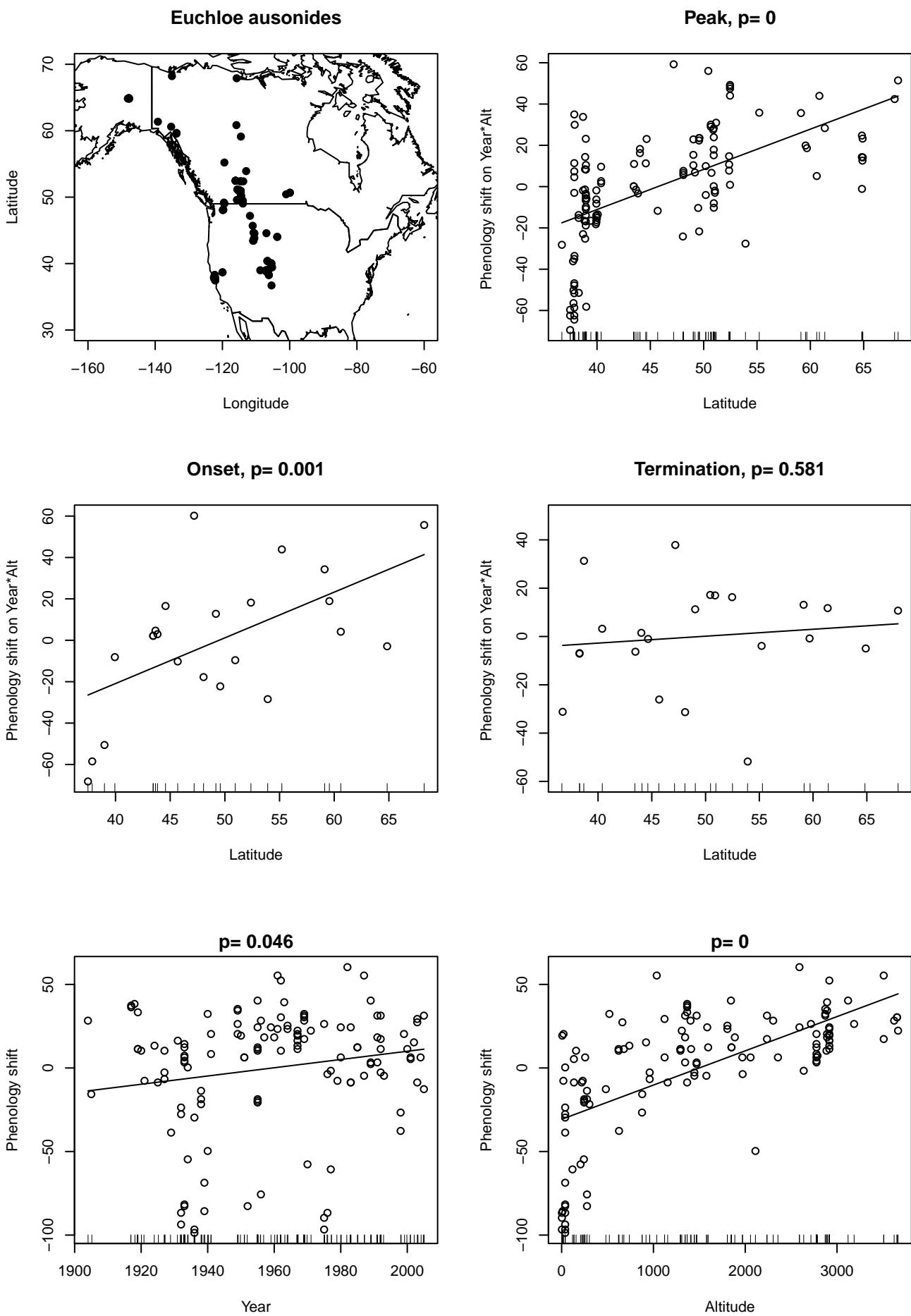
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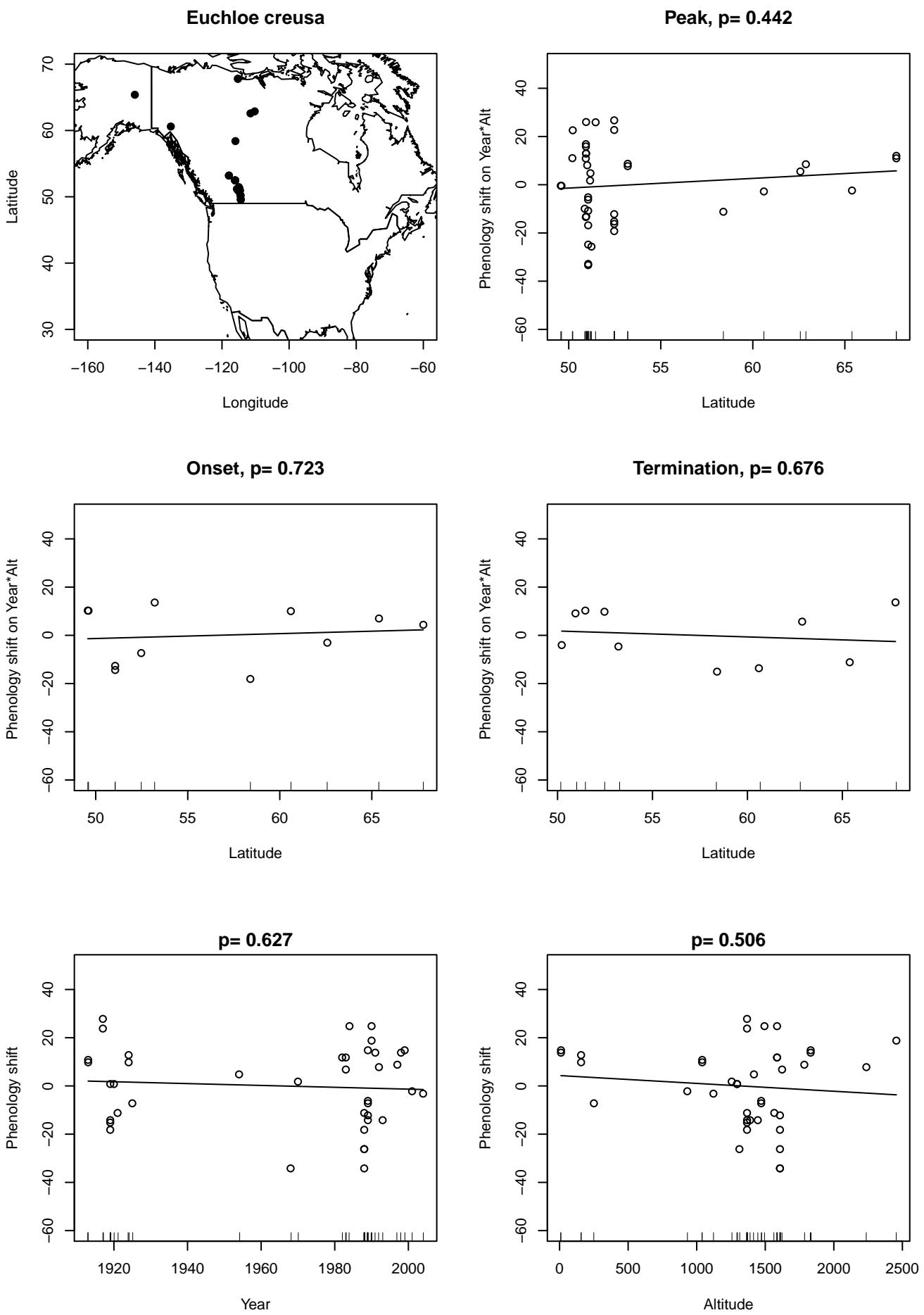


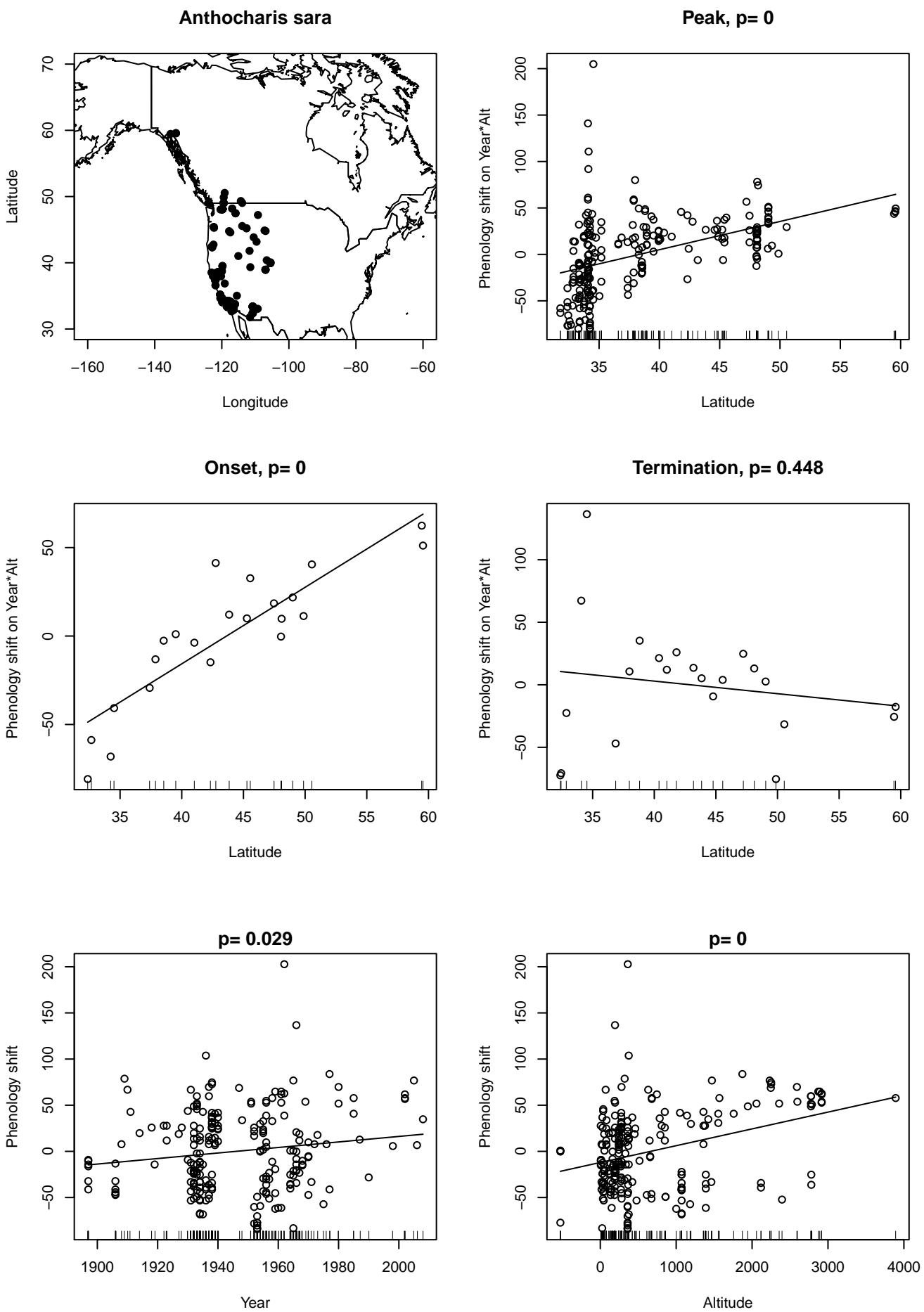


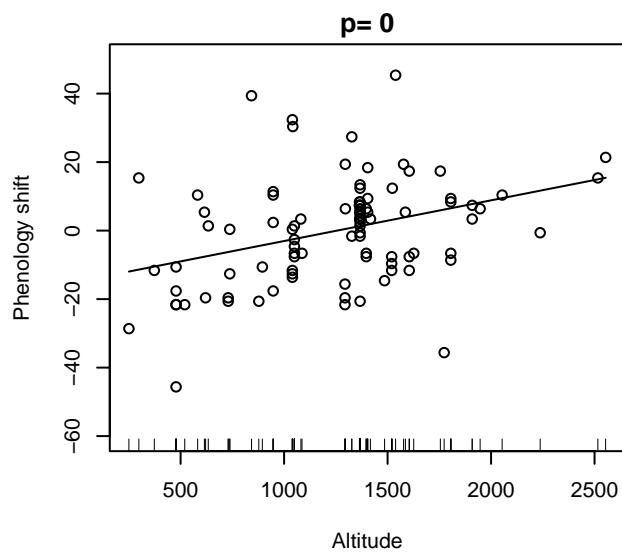
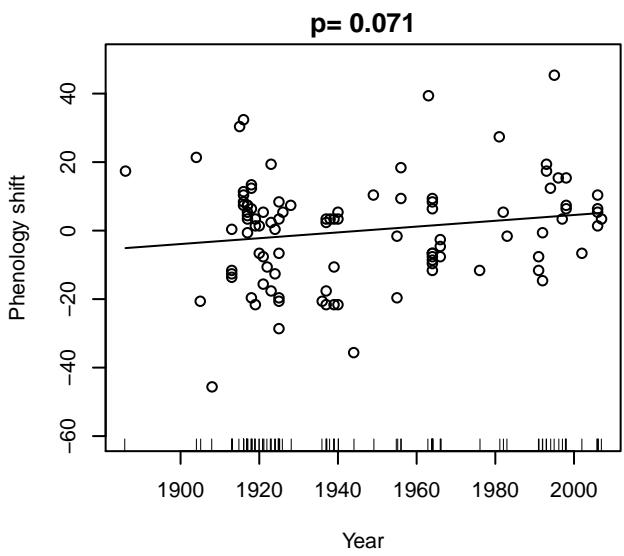
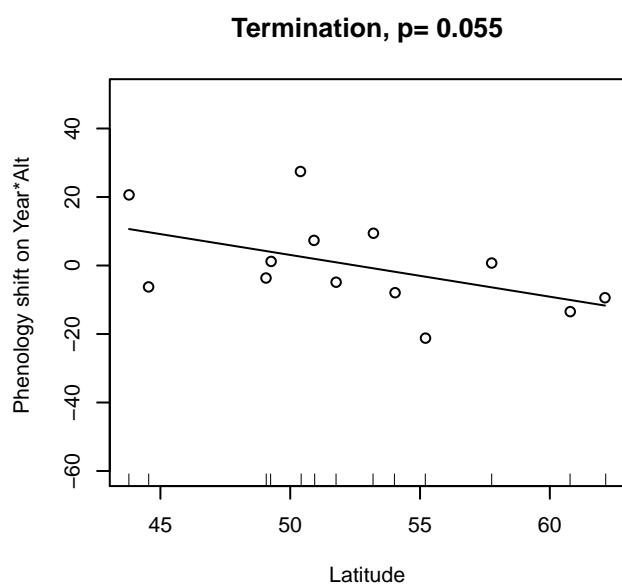
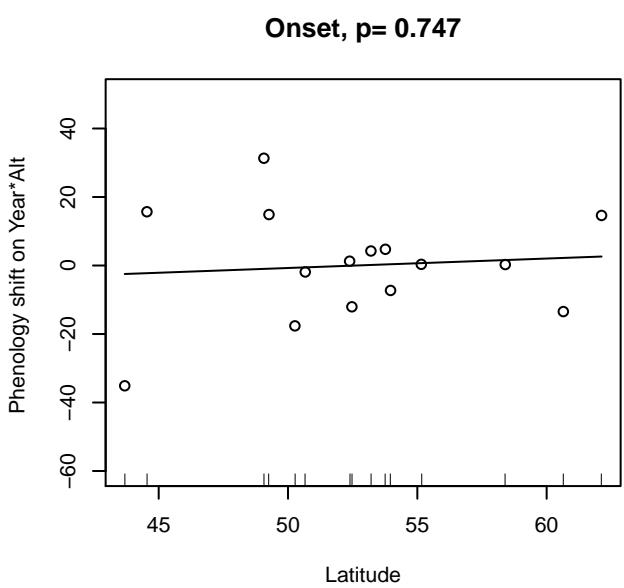
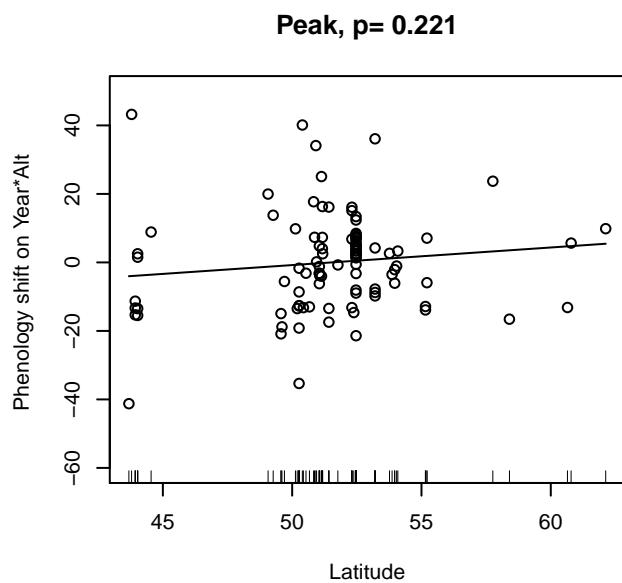
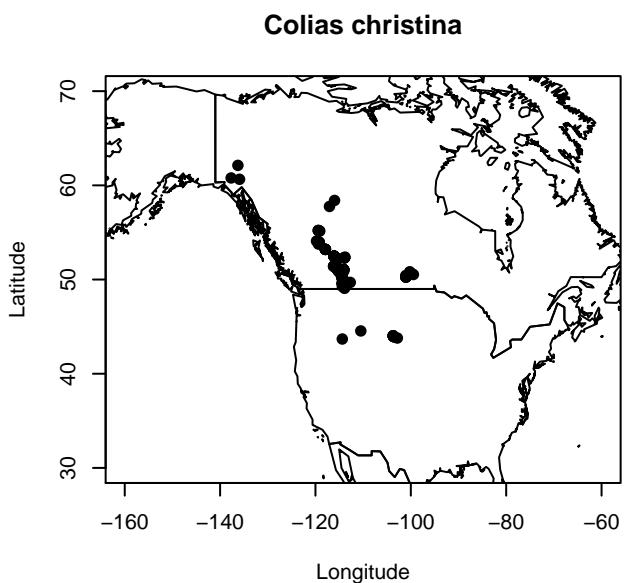


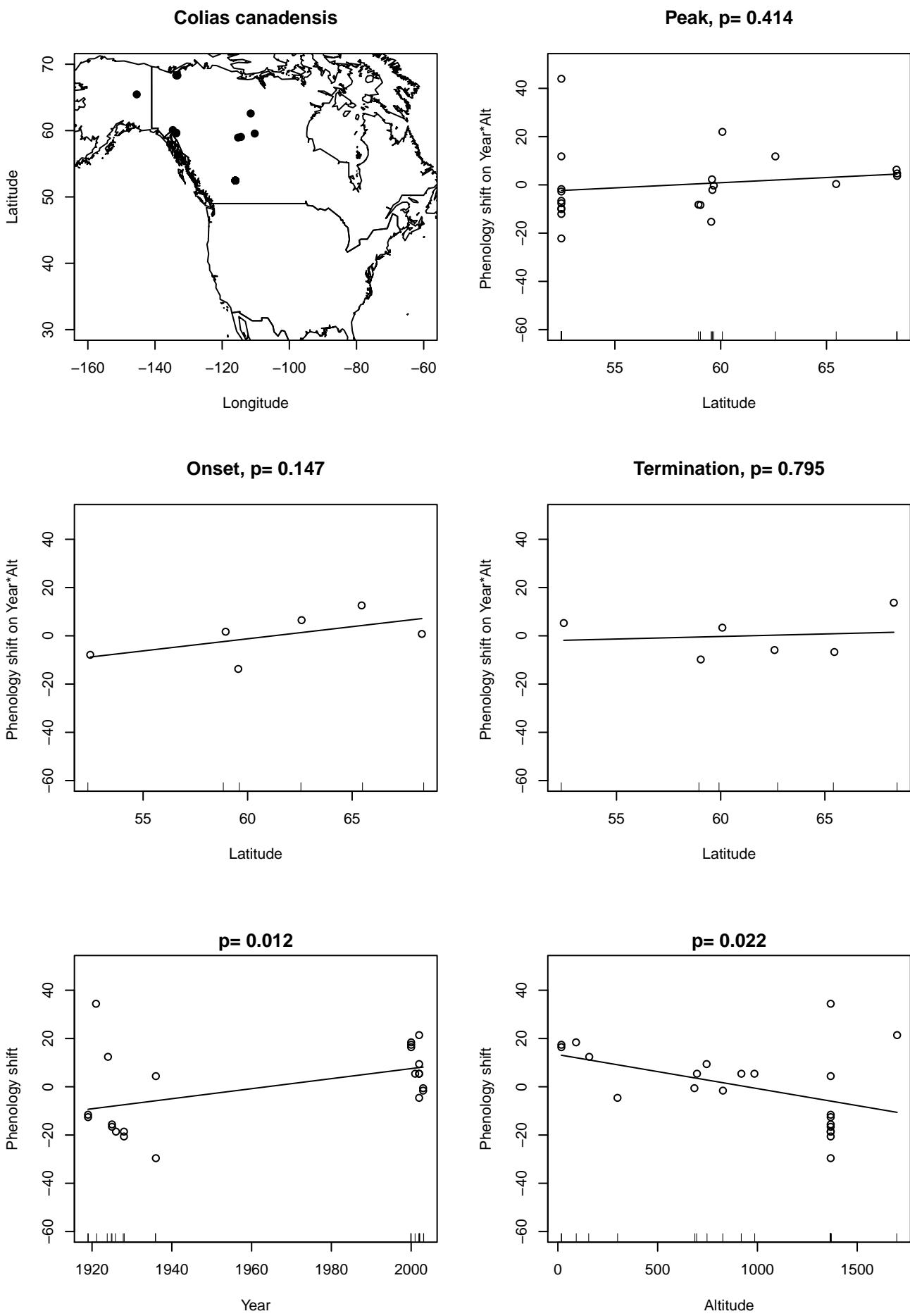


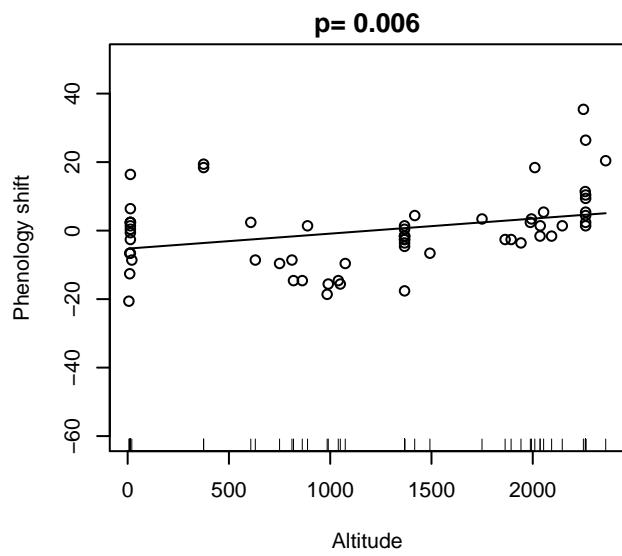
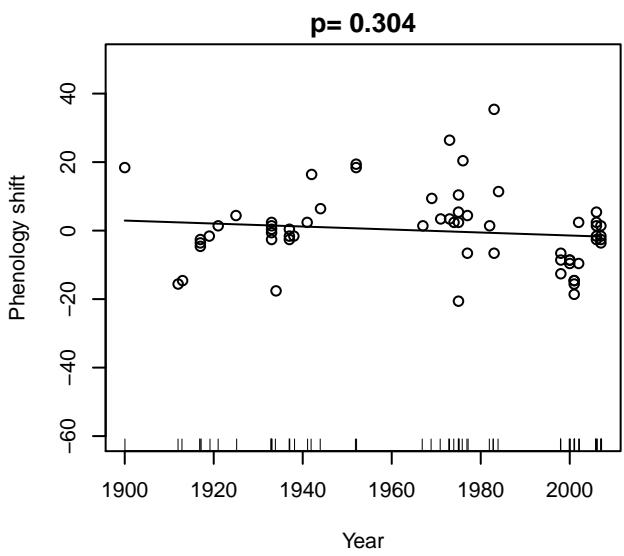
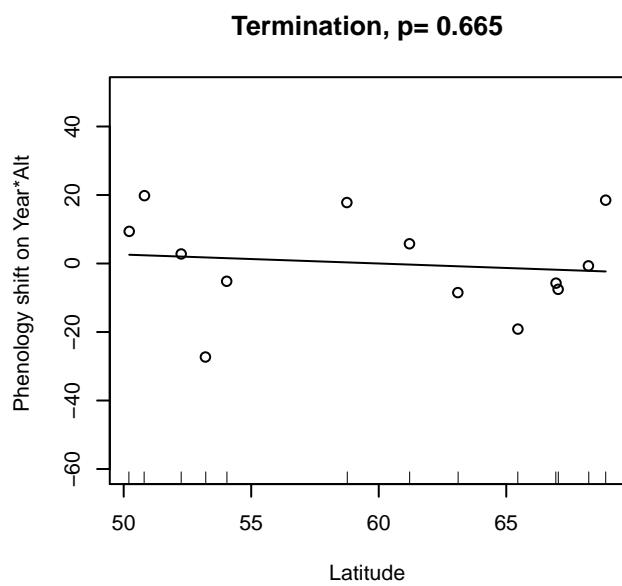
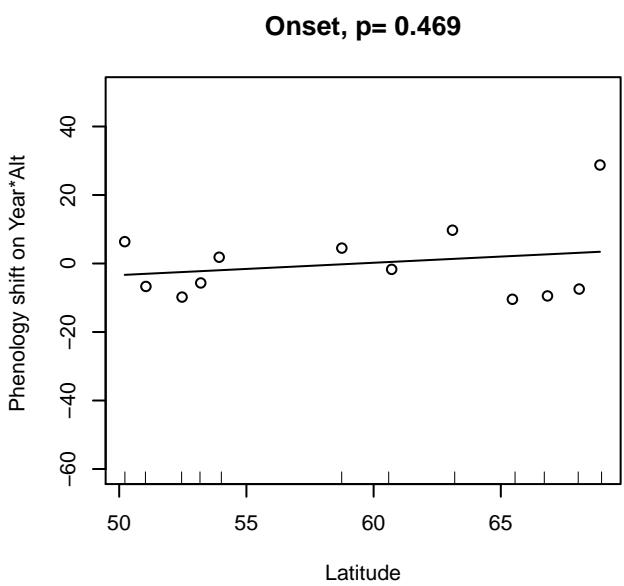
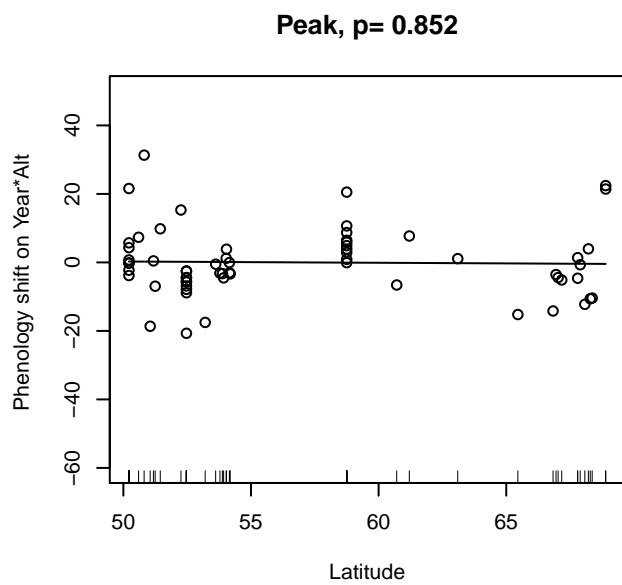
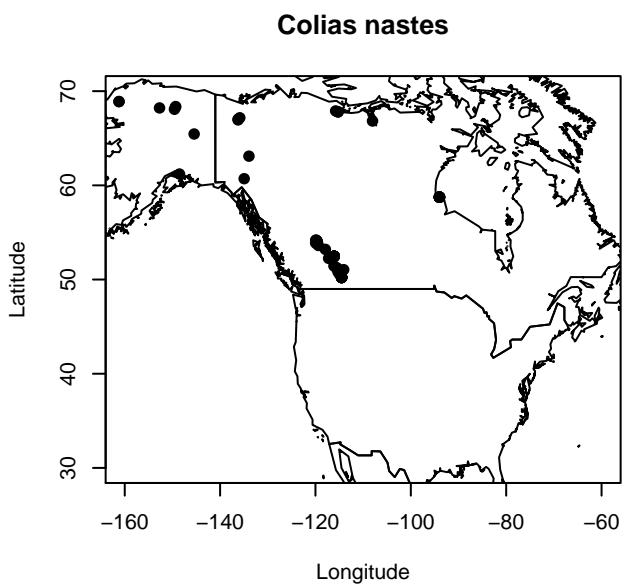


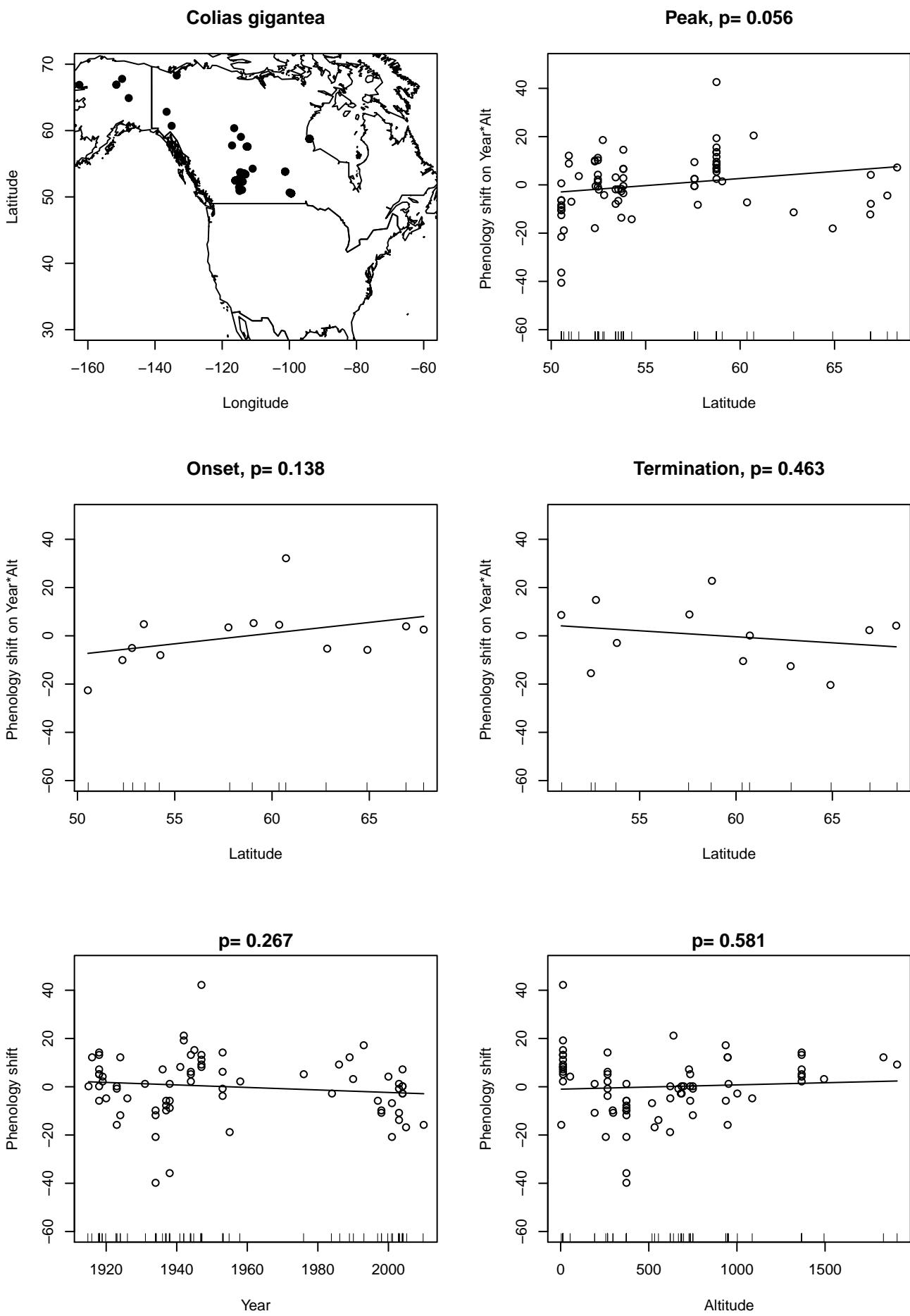


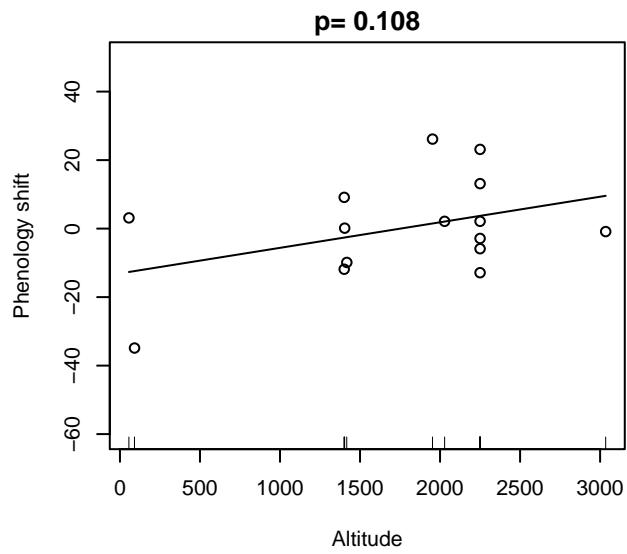
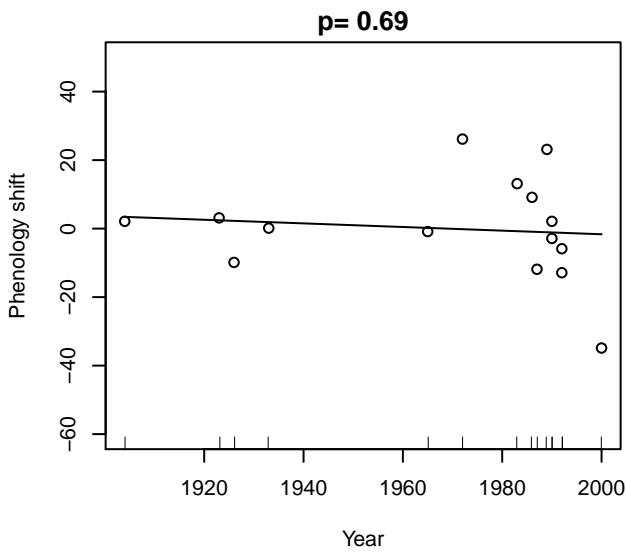
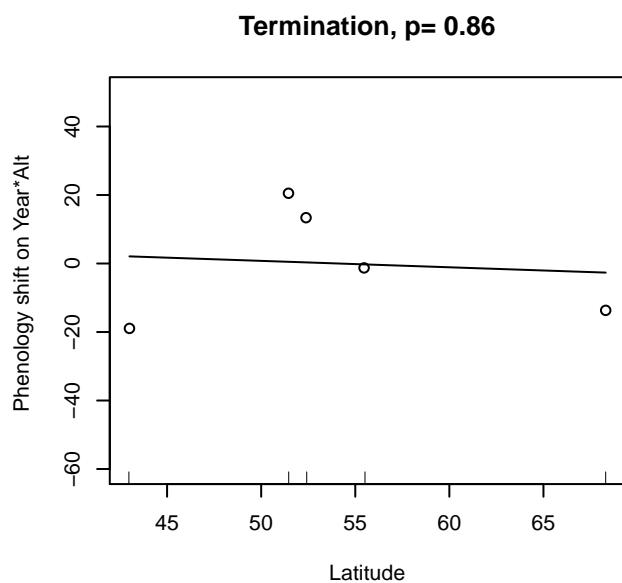
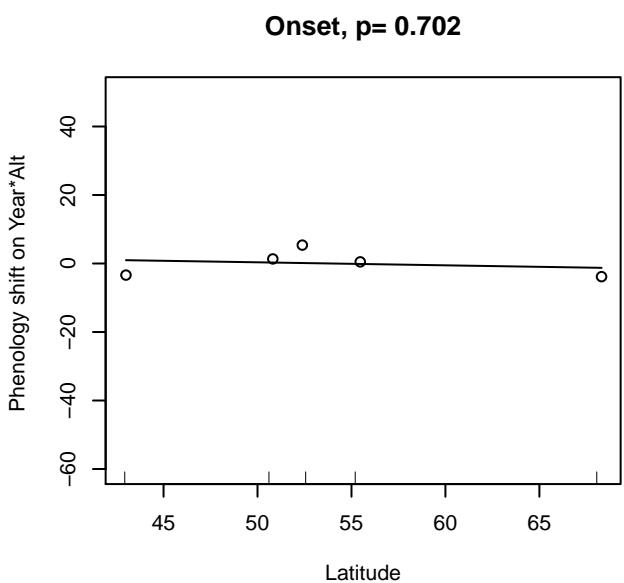
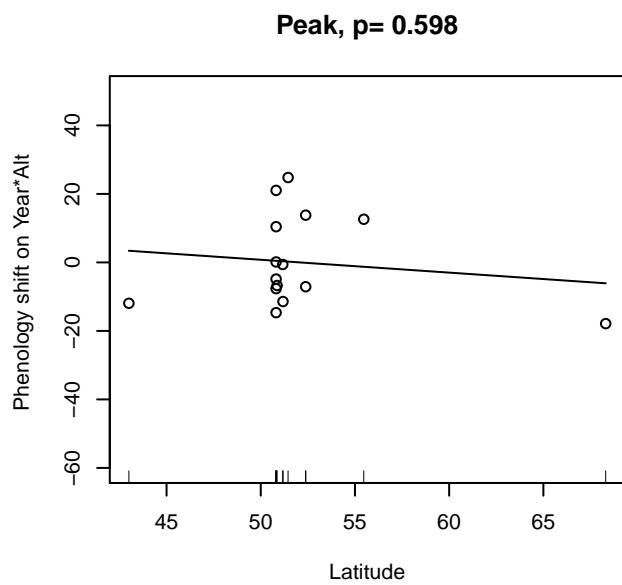
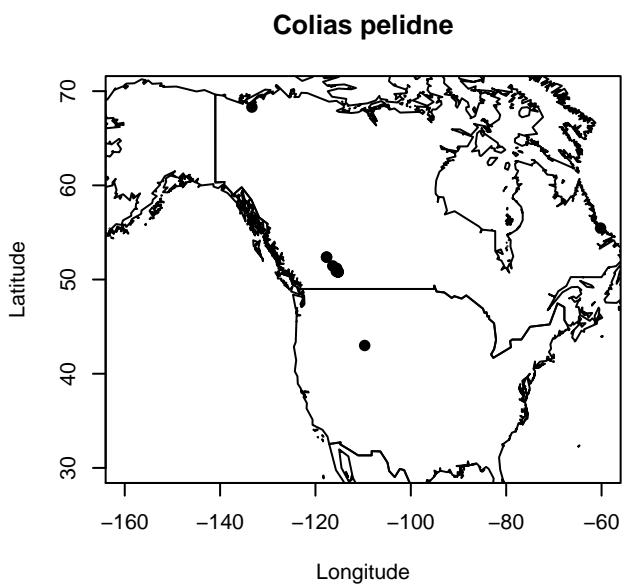


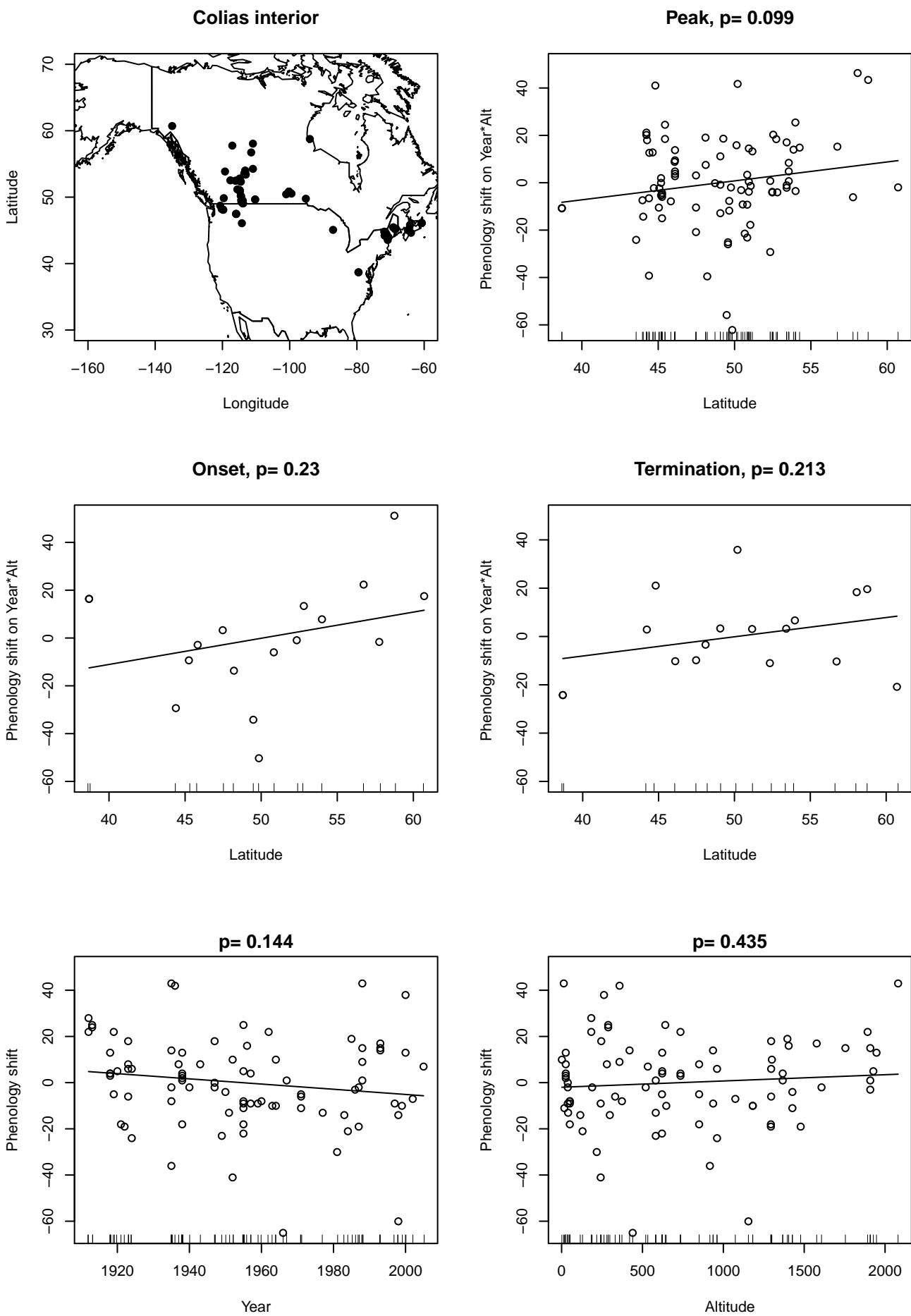


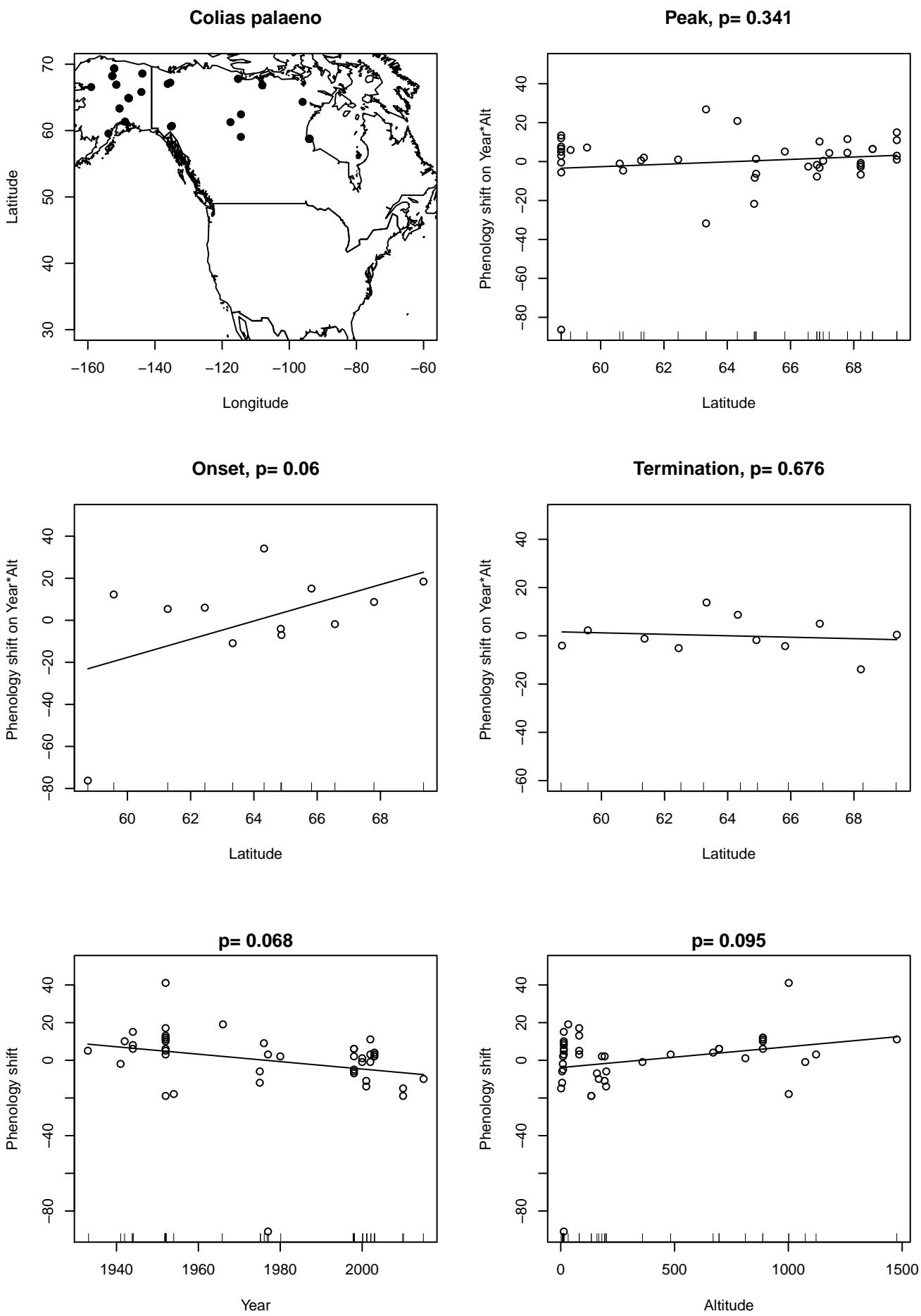


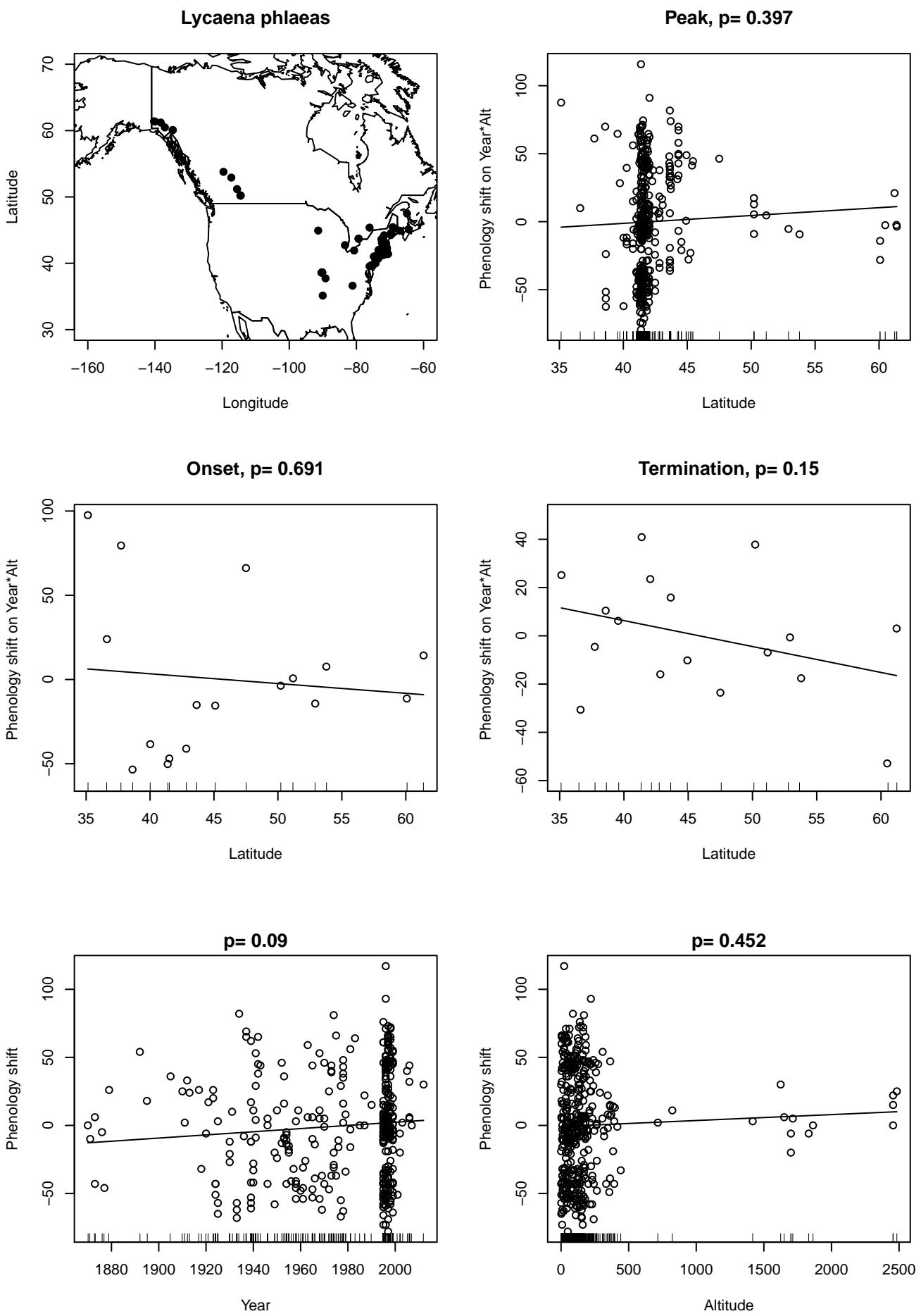


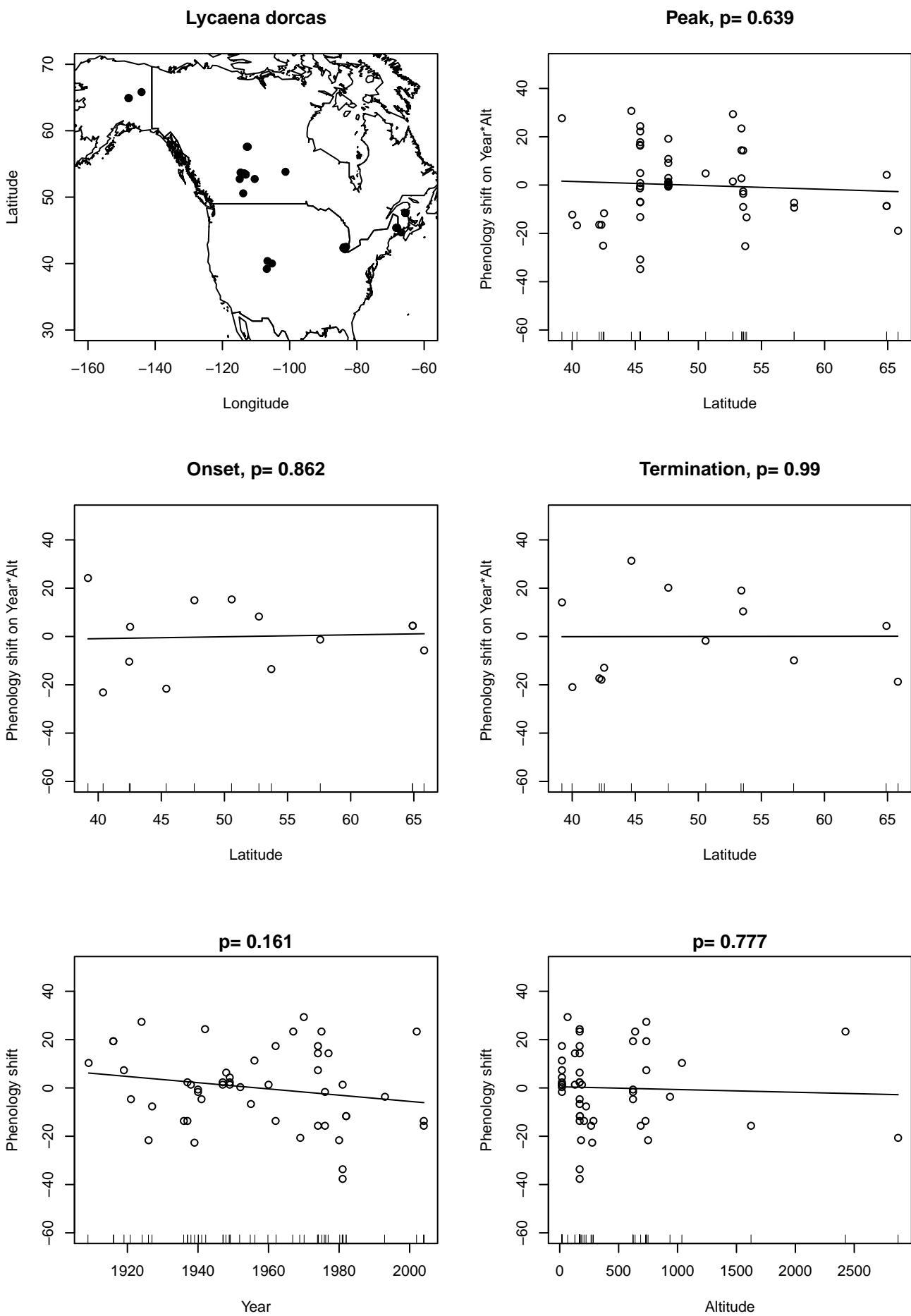


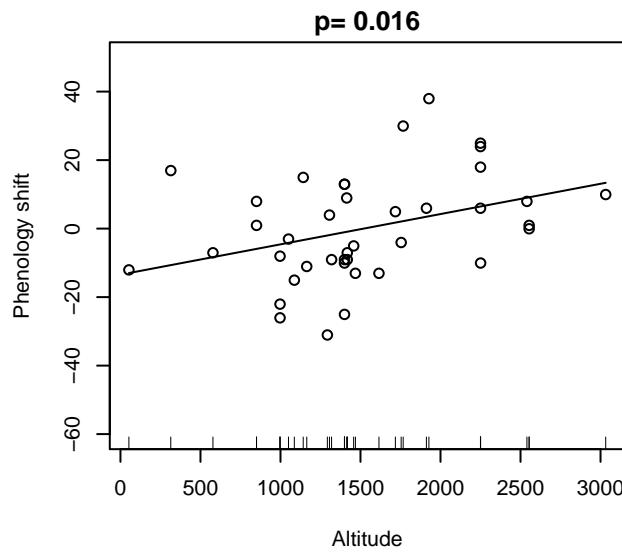
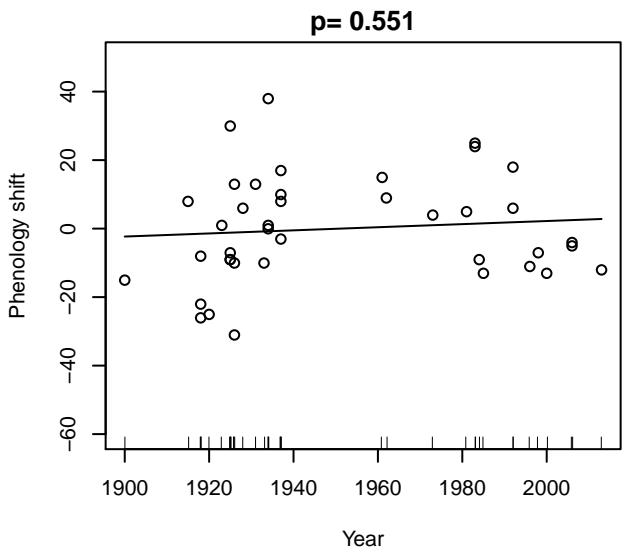
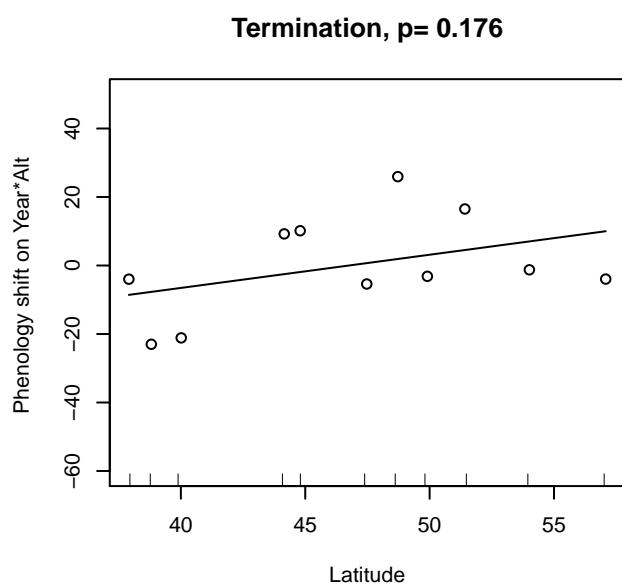
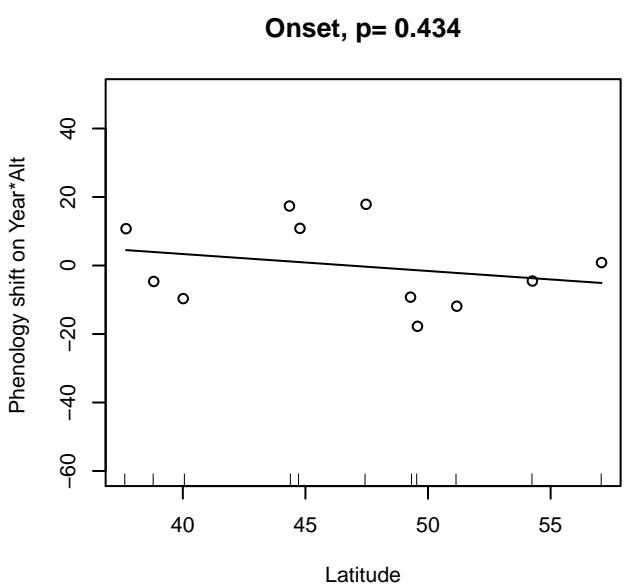
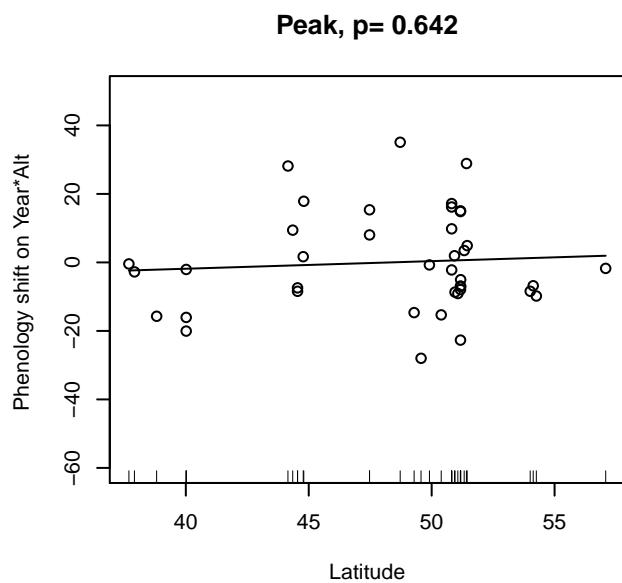
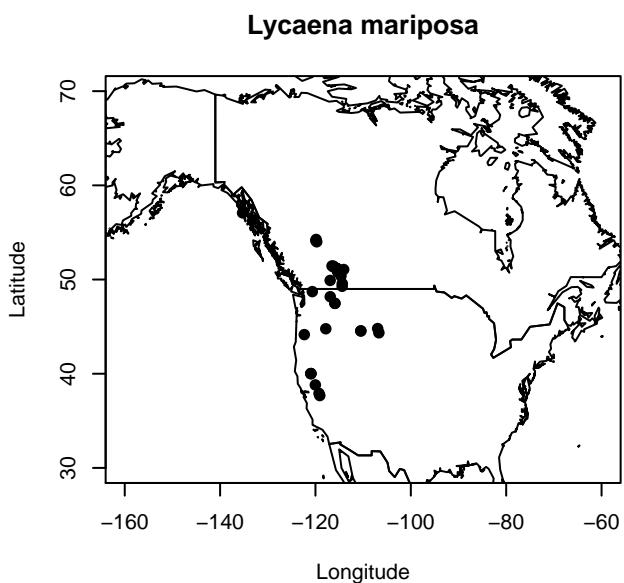


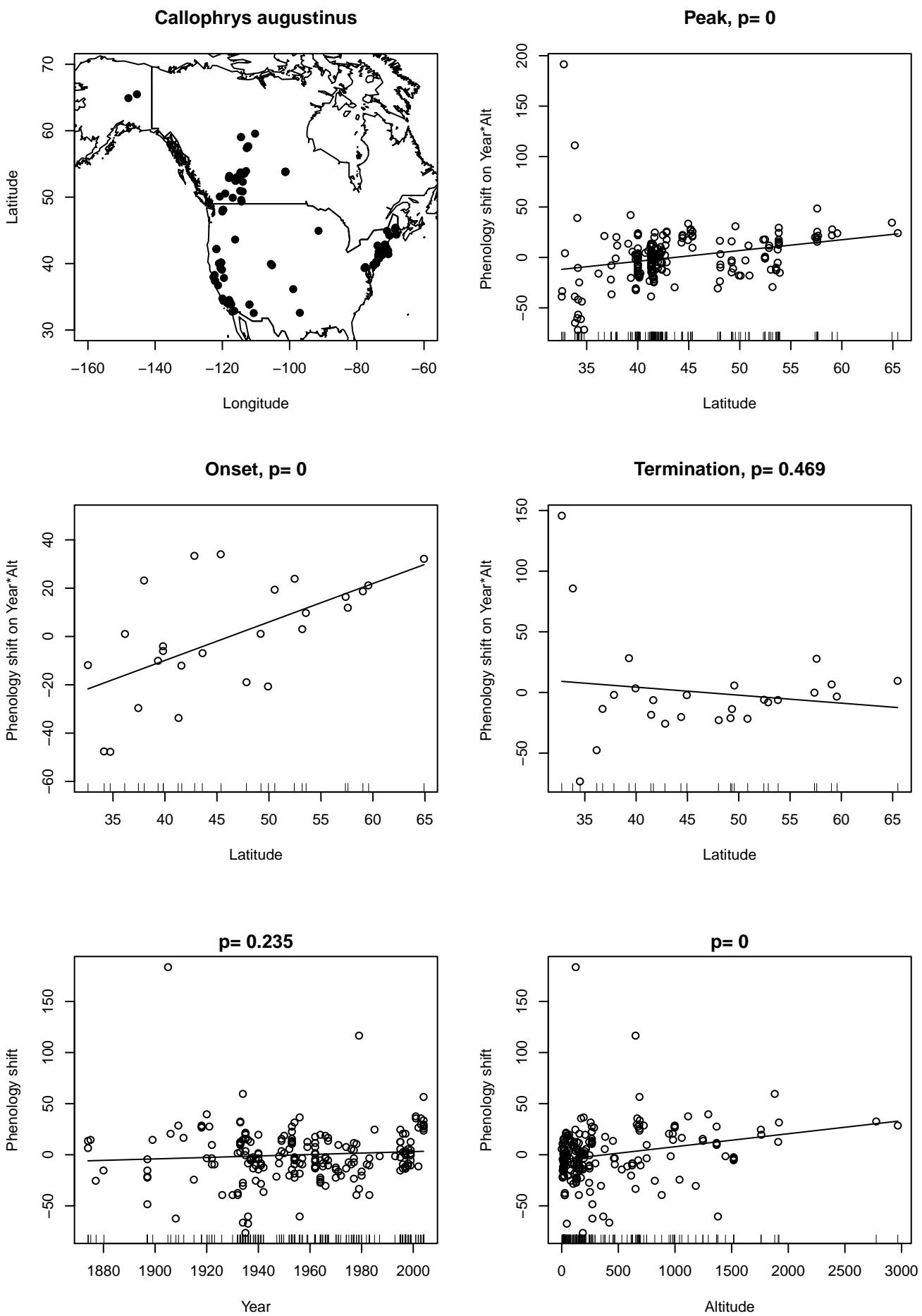


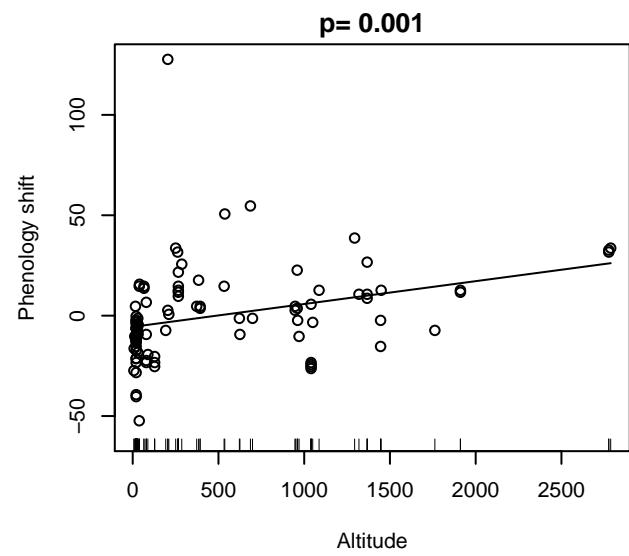
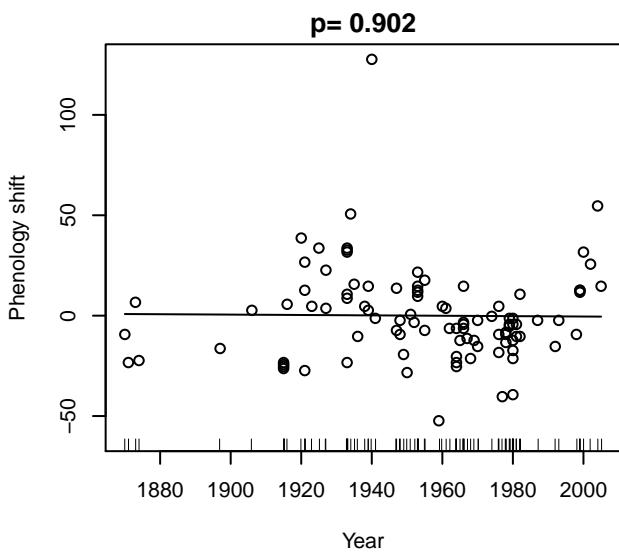
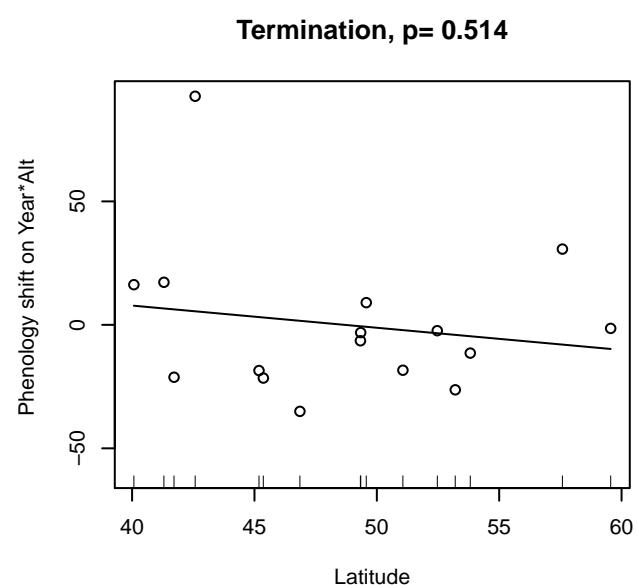
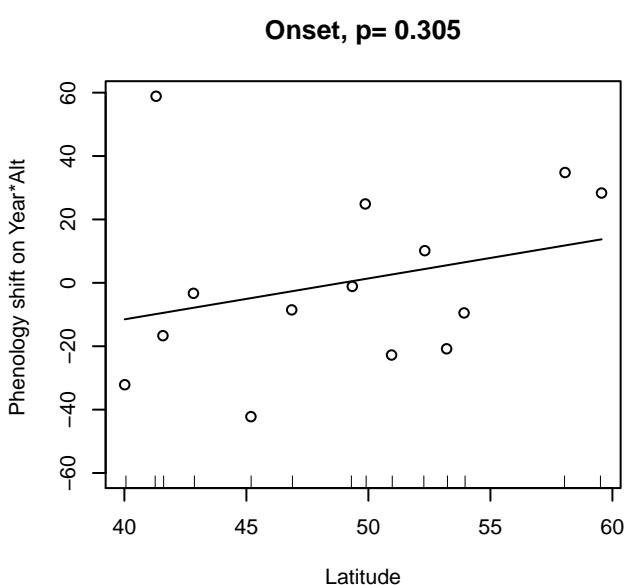
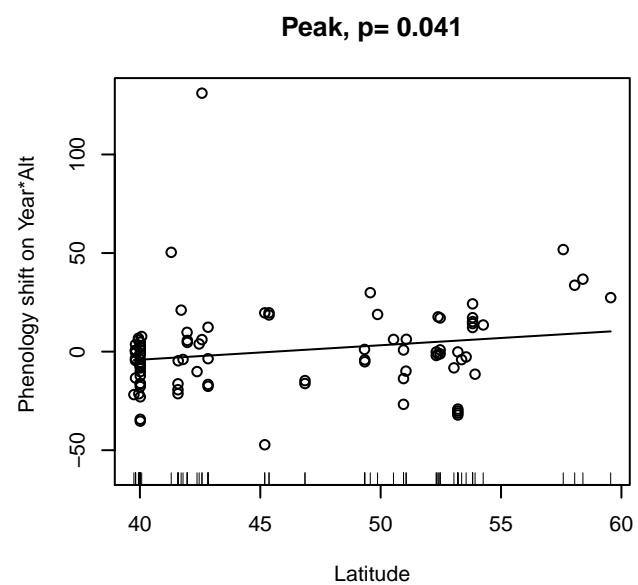
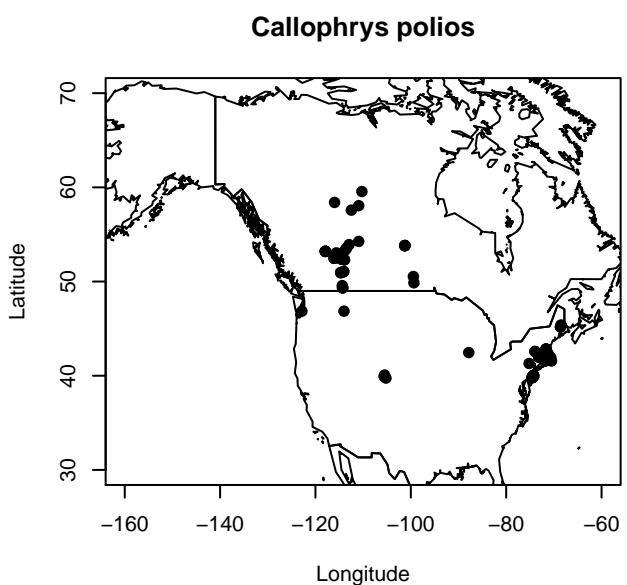


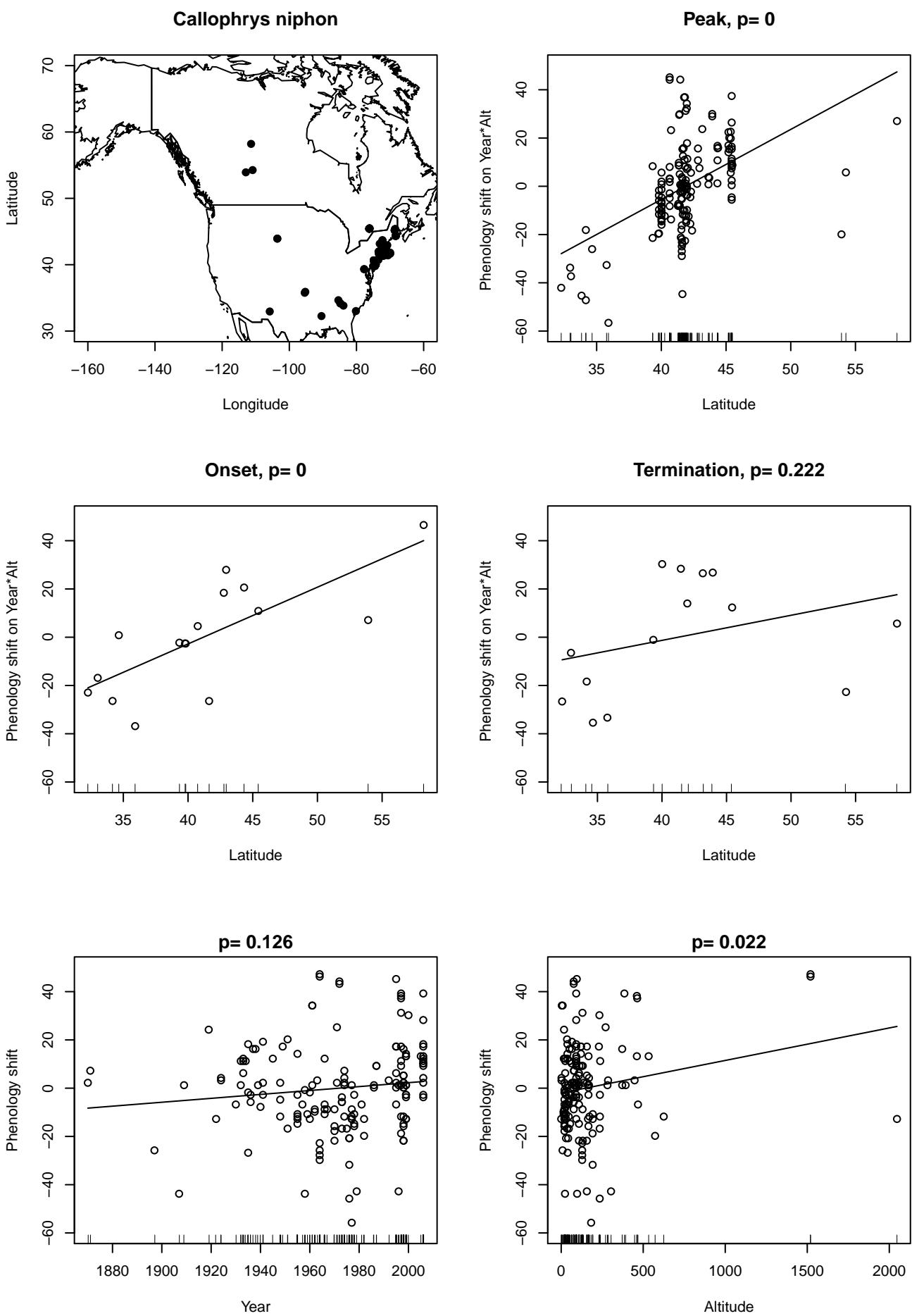


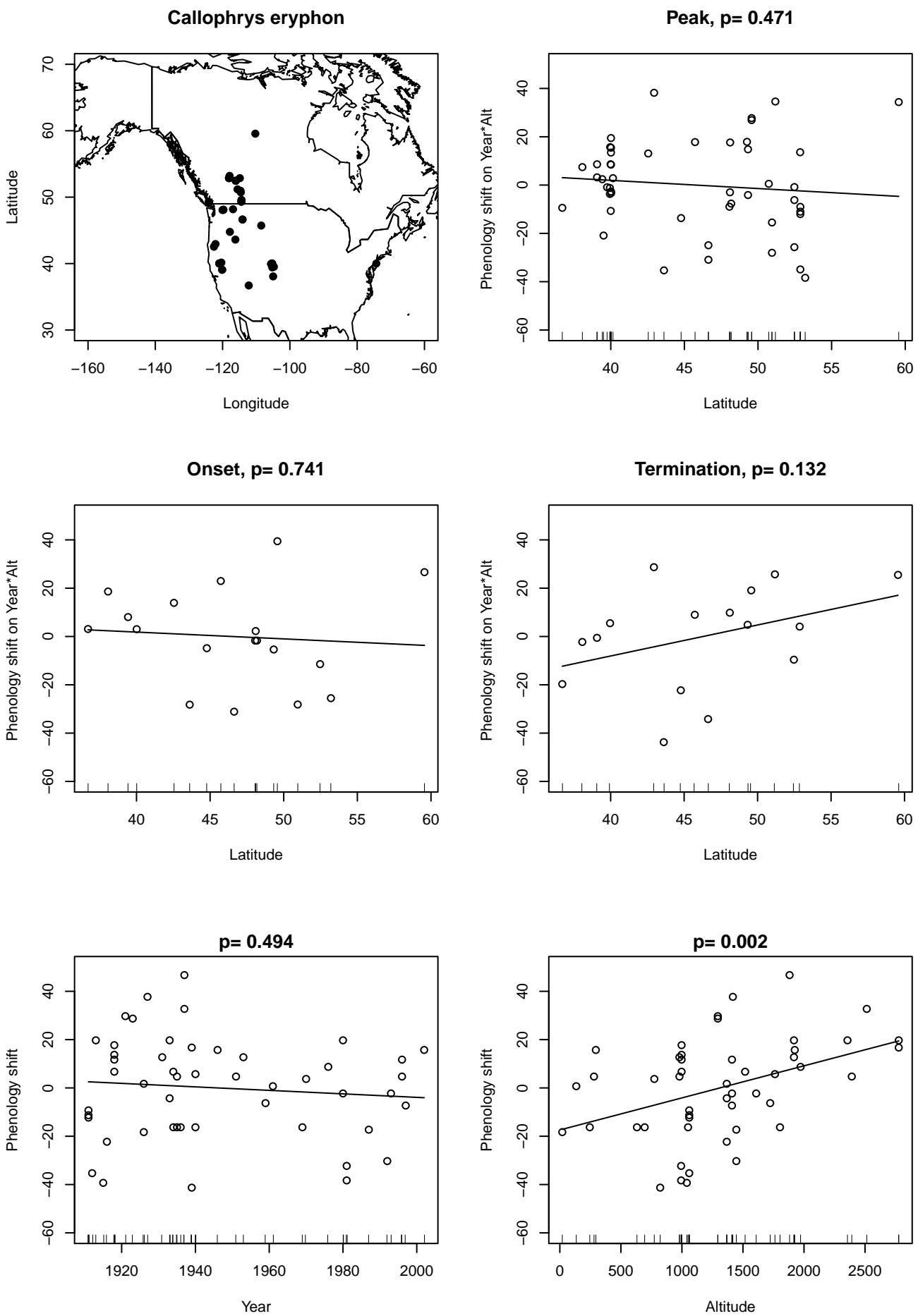


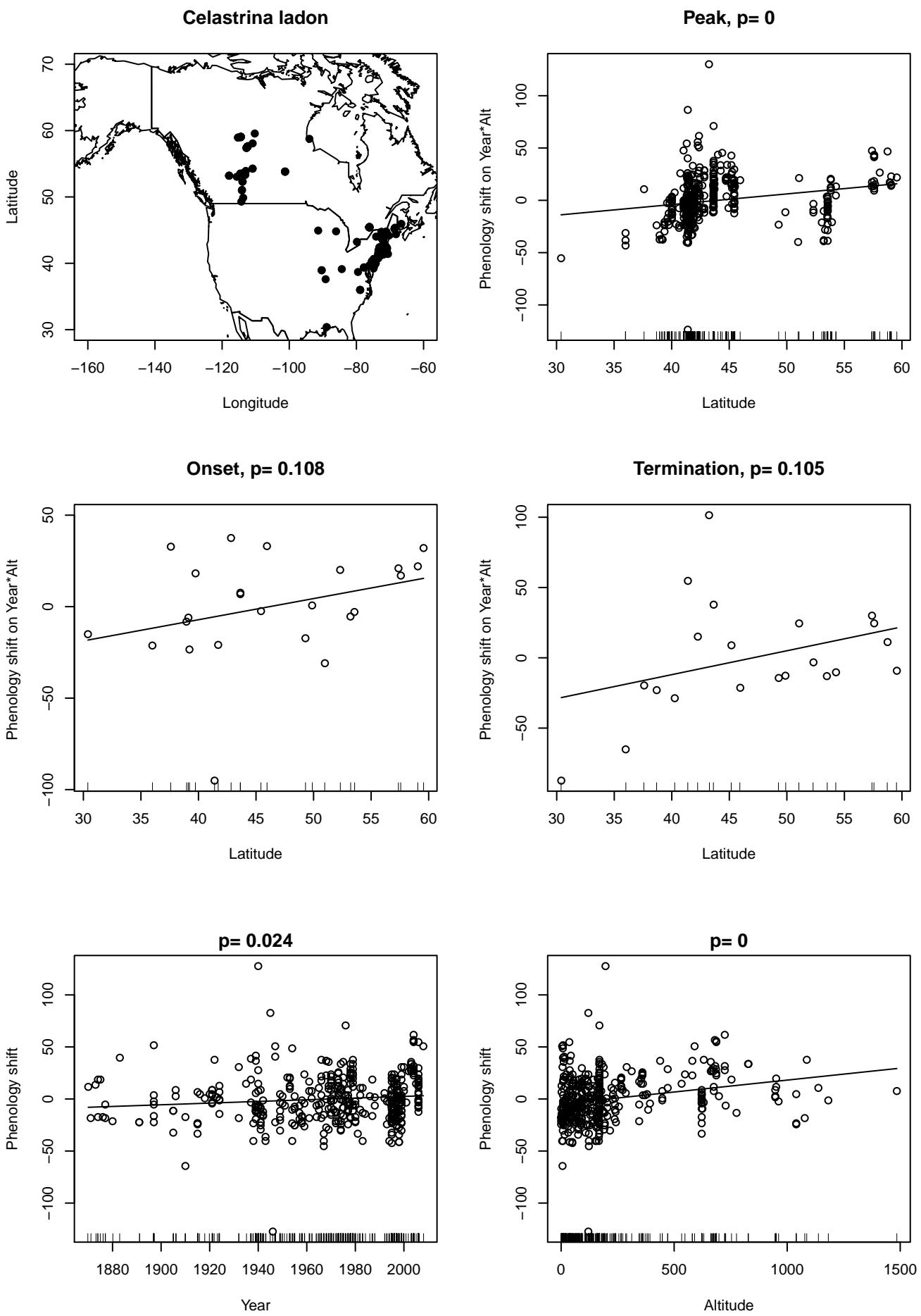


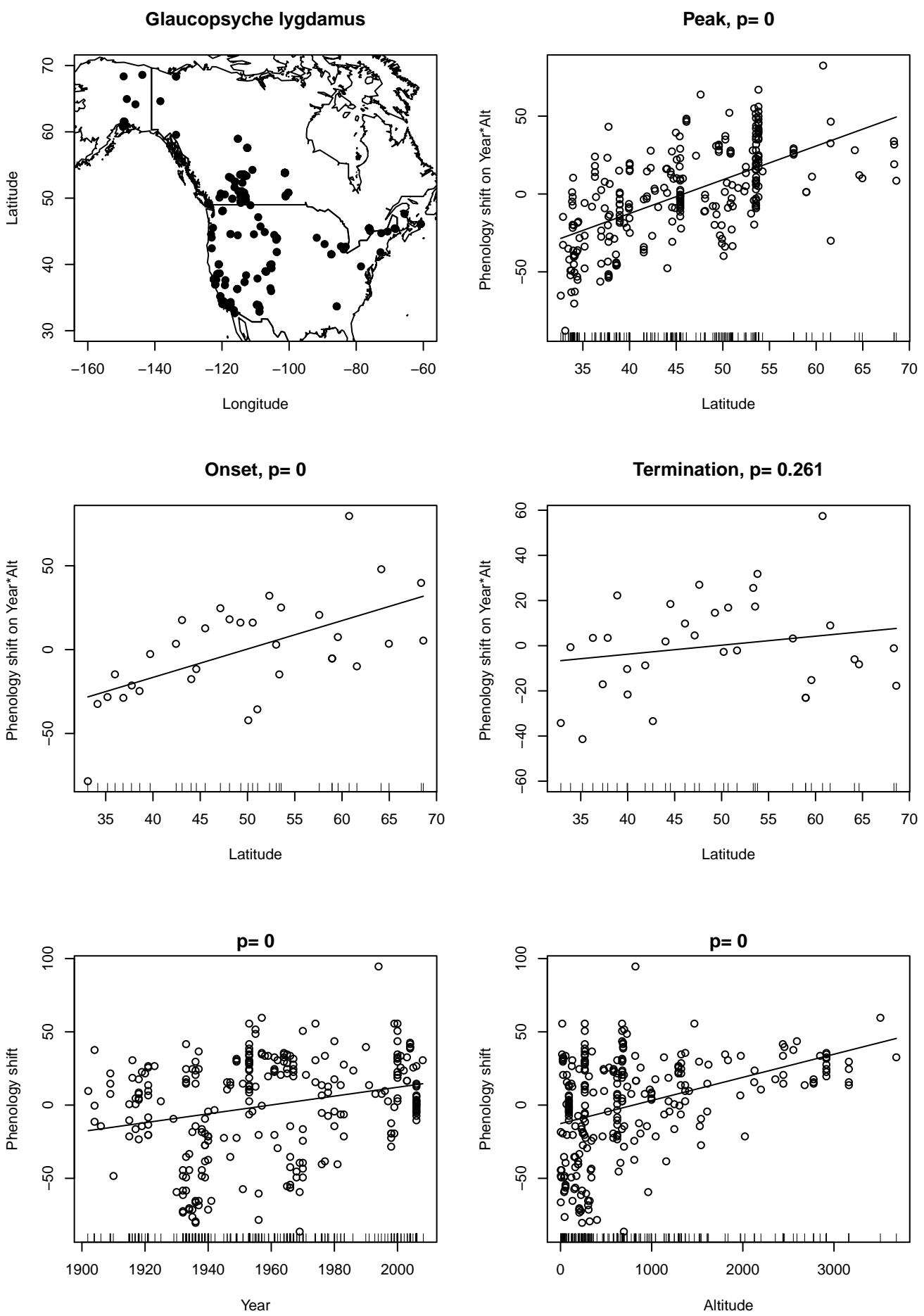


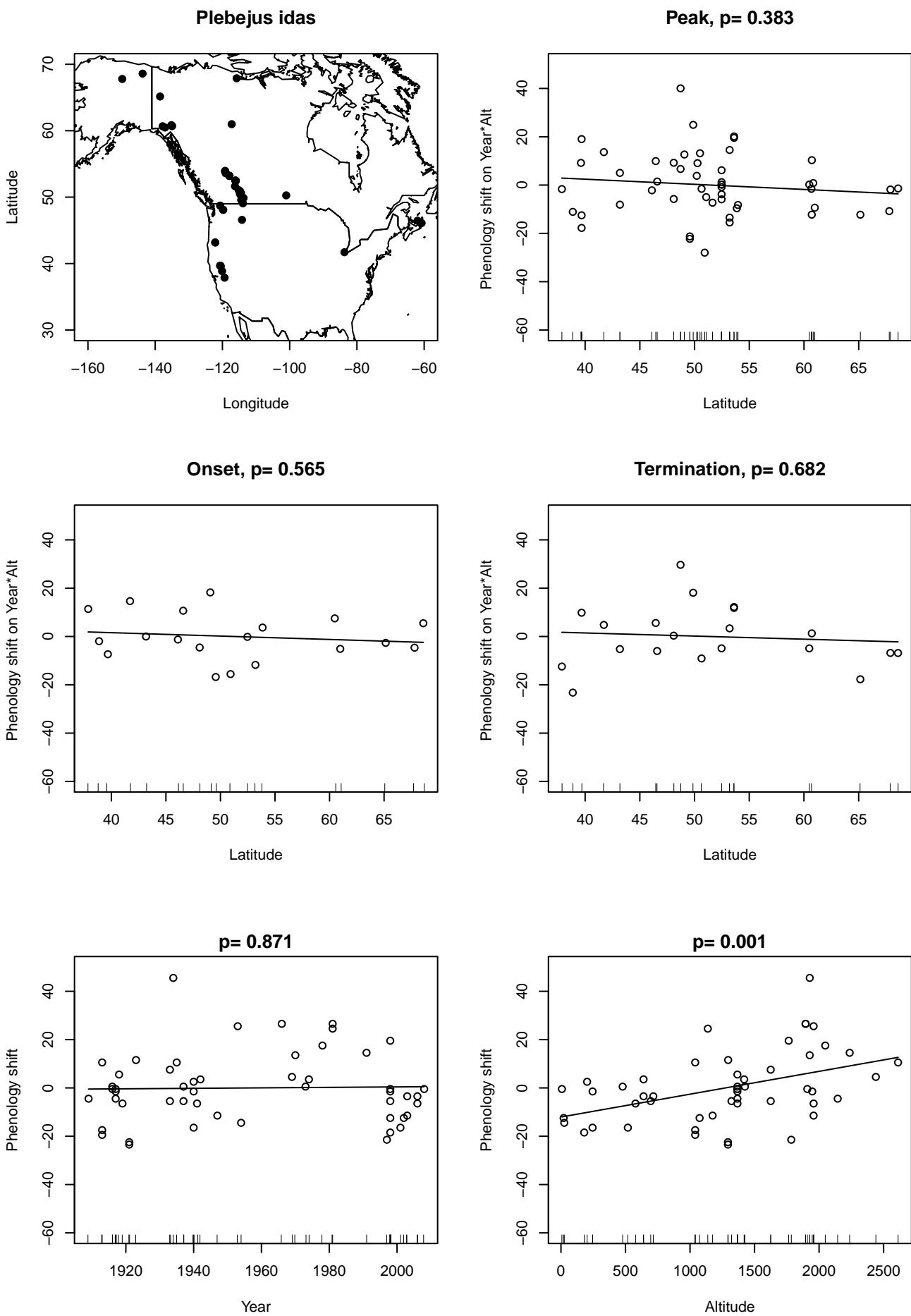


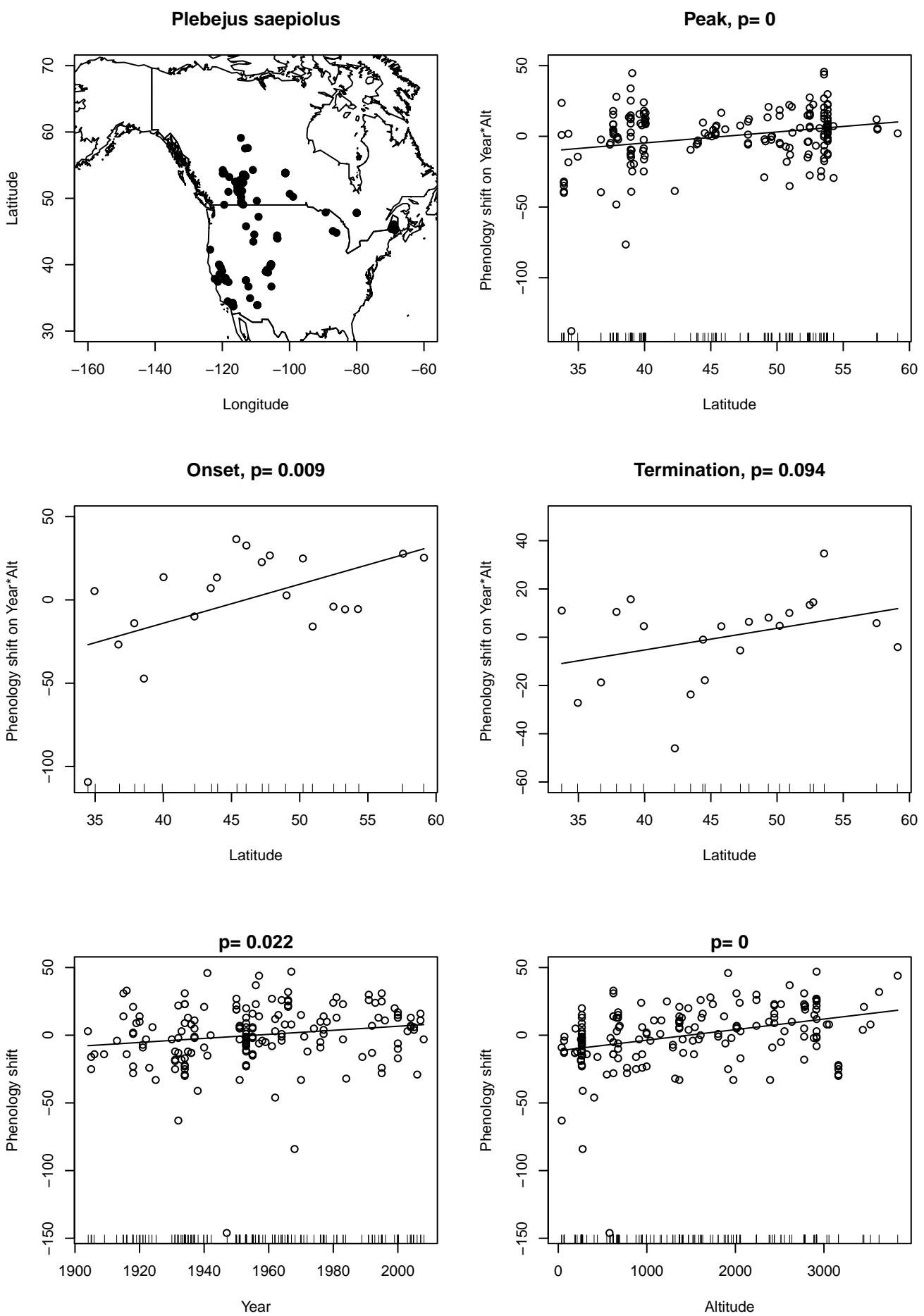


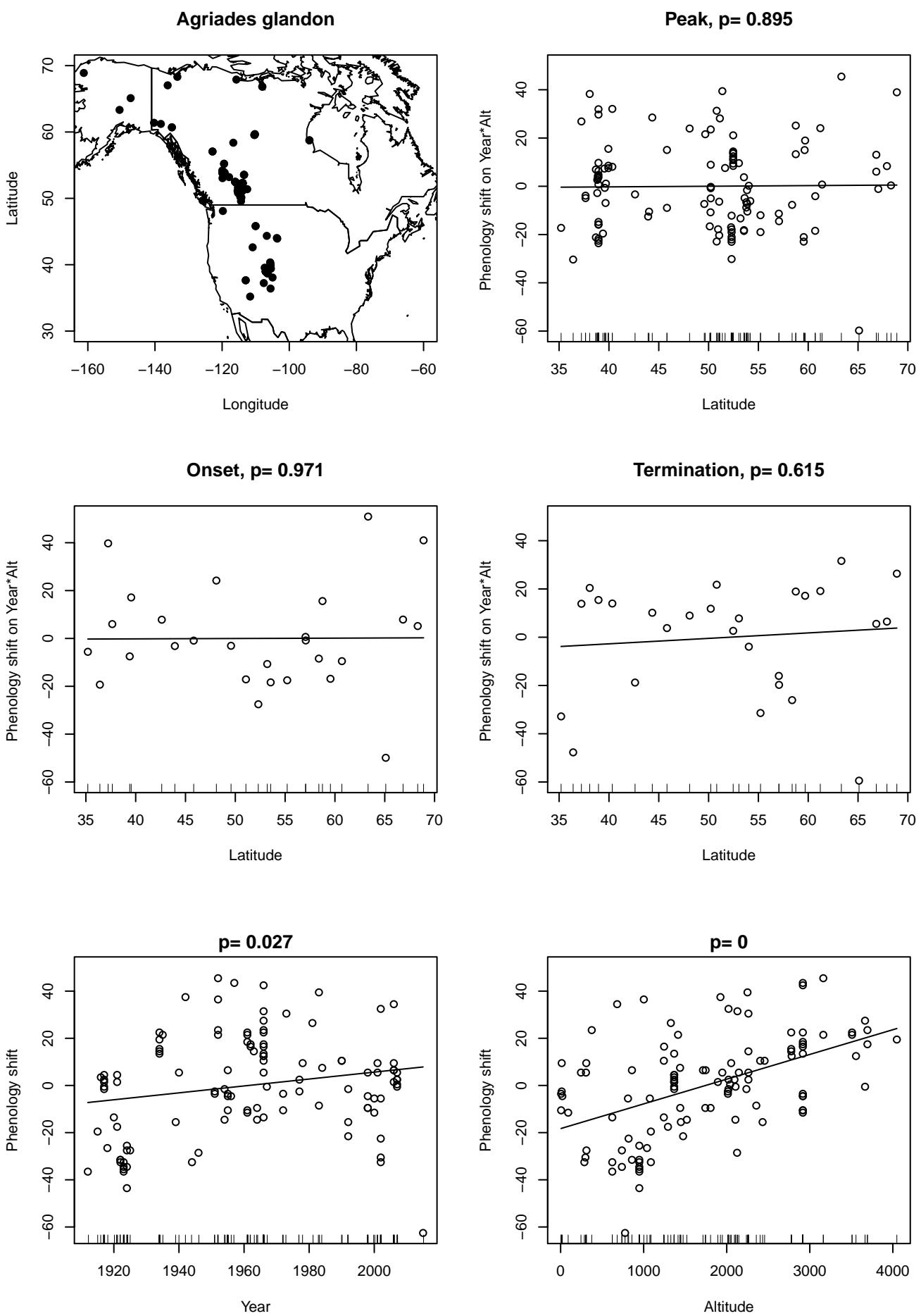




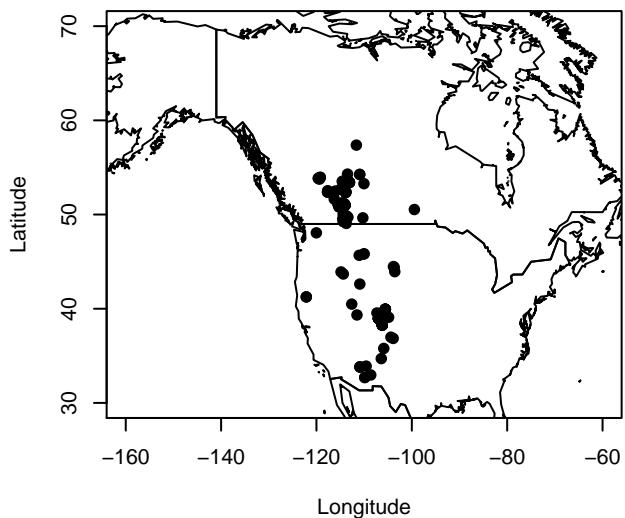




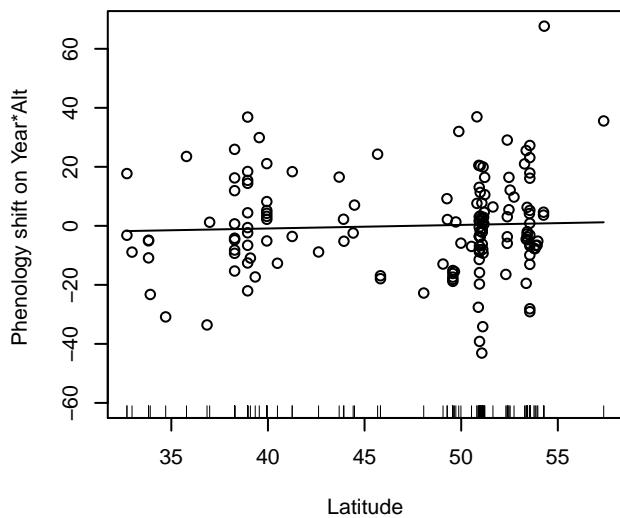




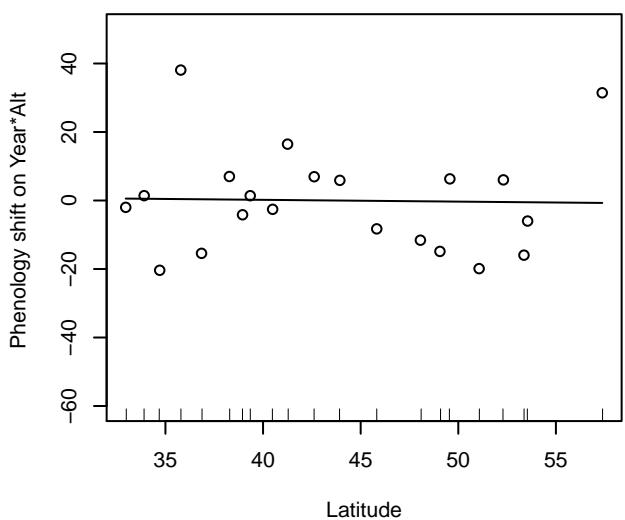
### *Speyeria hesperis*



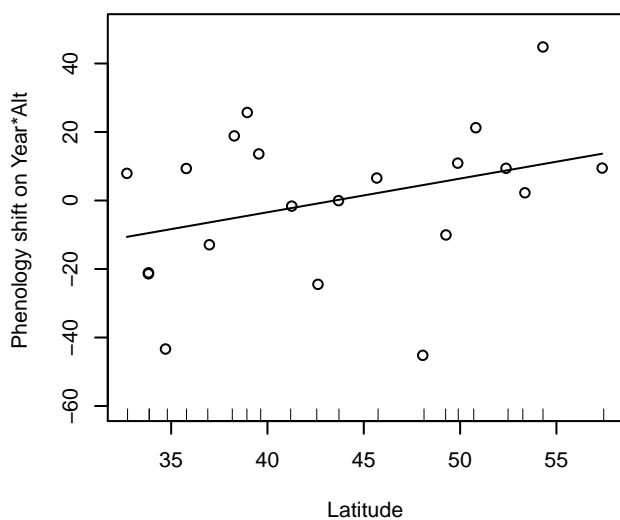
Peak,  $p=0.559$



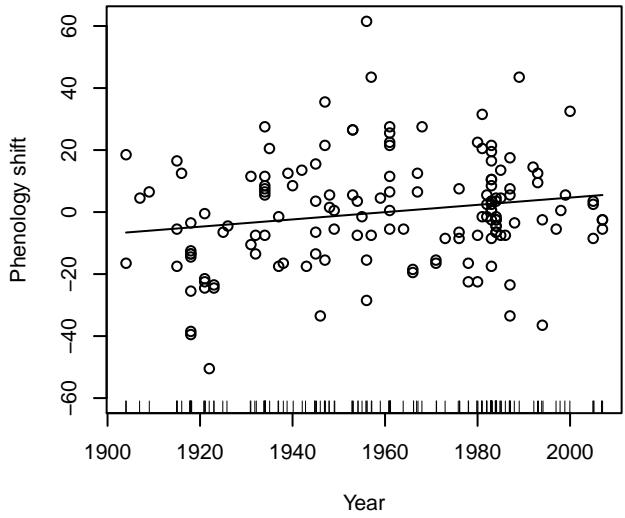
Onset,  $p=0.914$



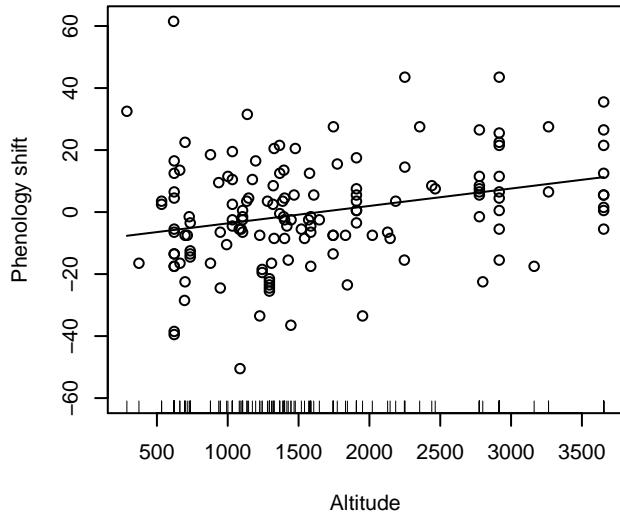
Termination,  $p=0.113$

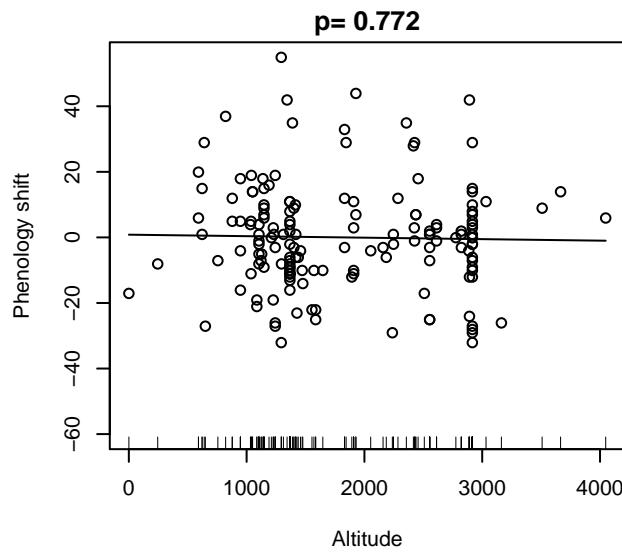
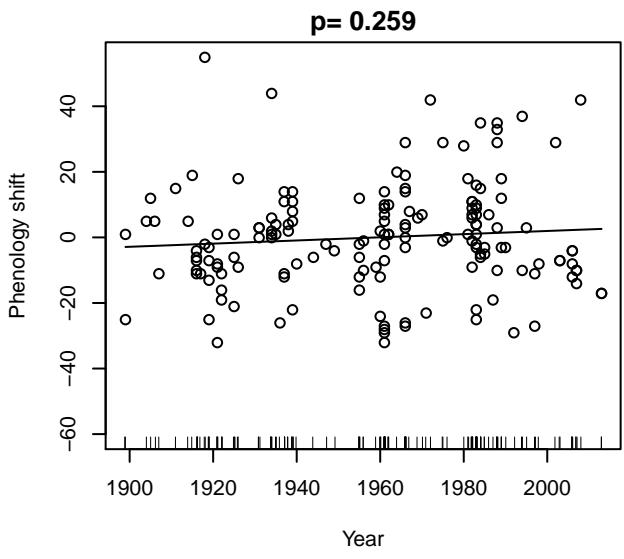
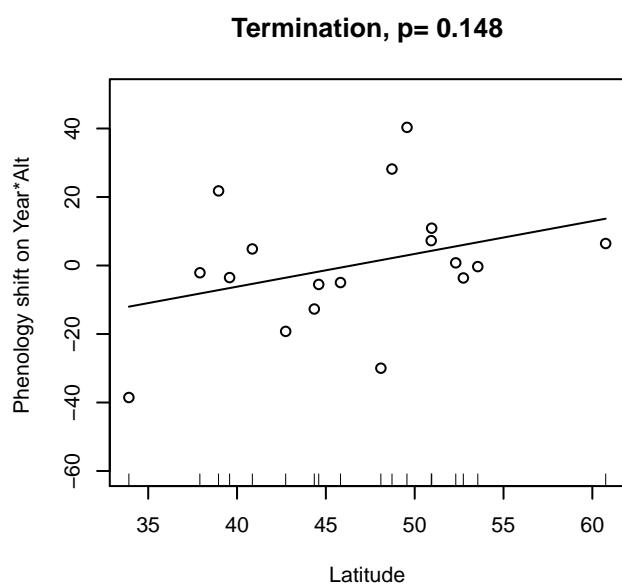
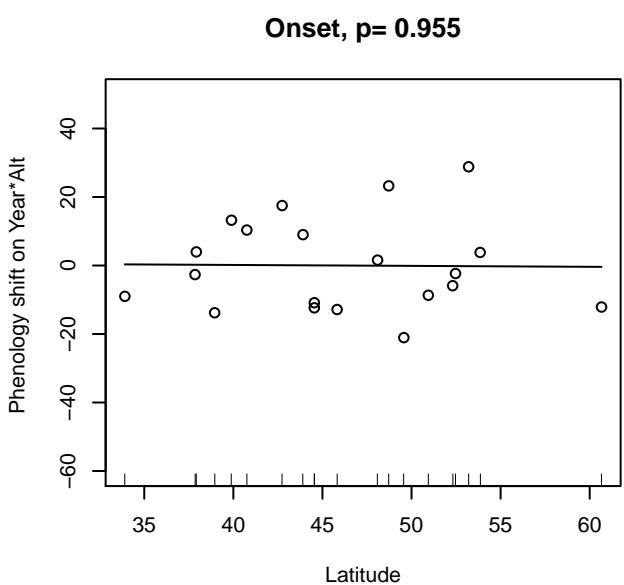
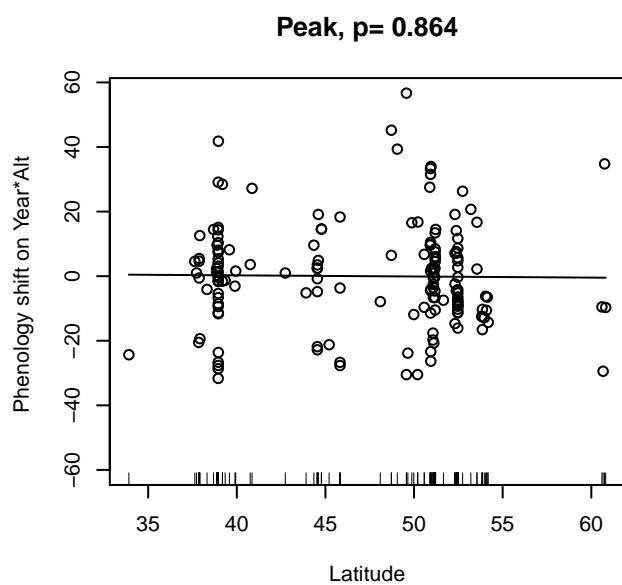
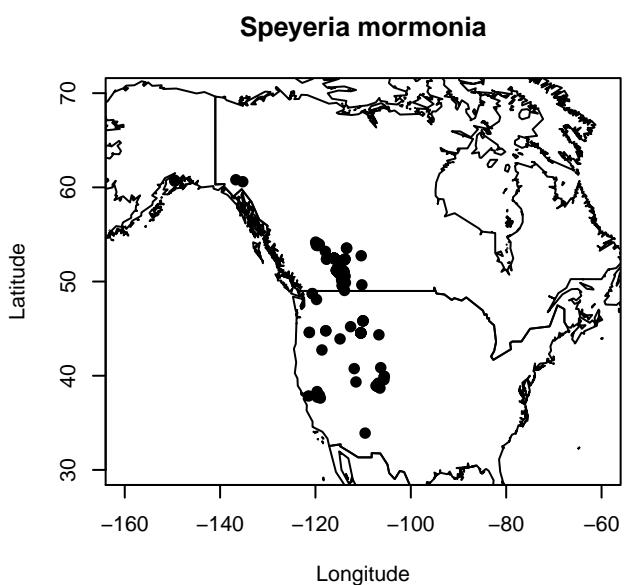


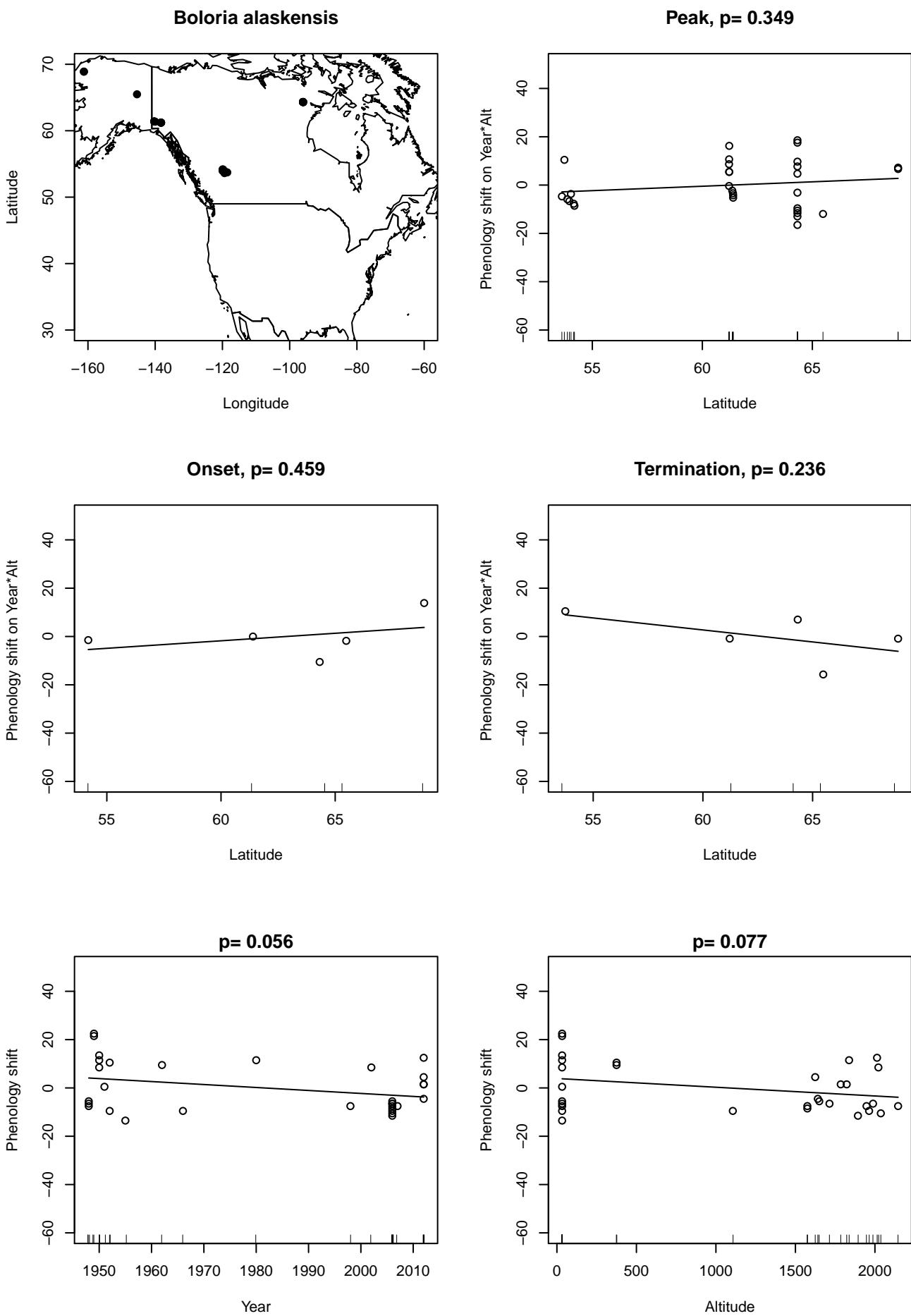
$p=0.022$

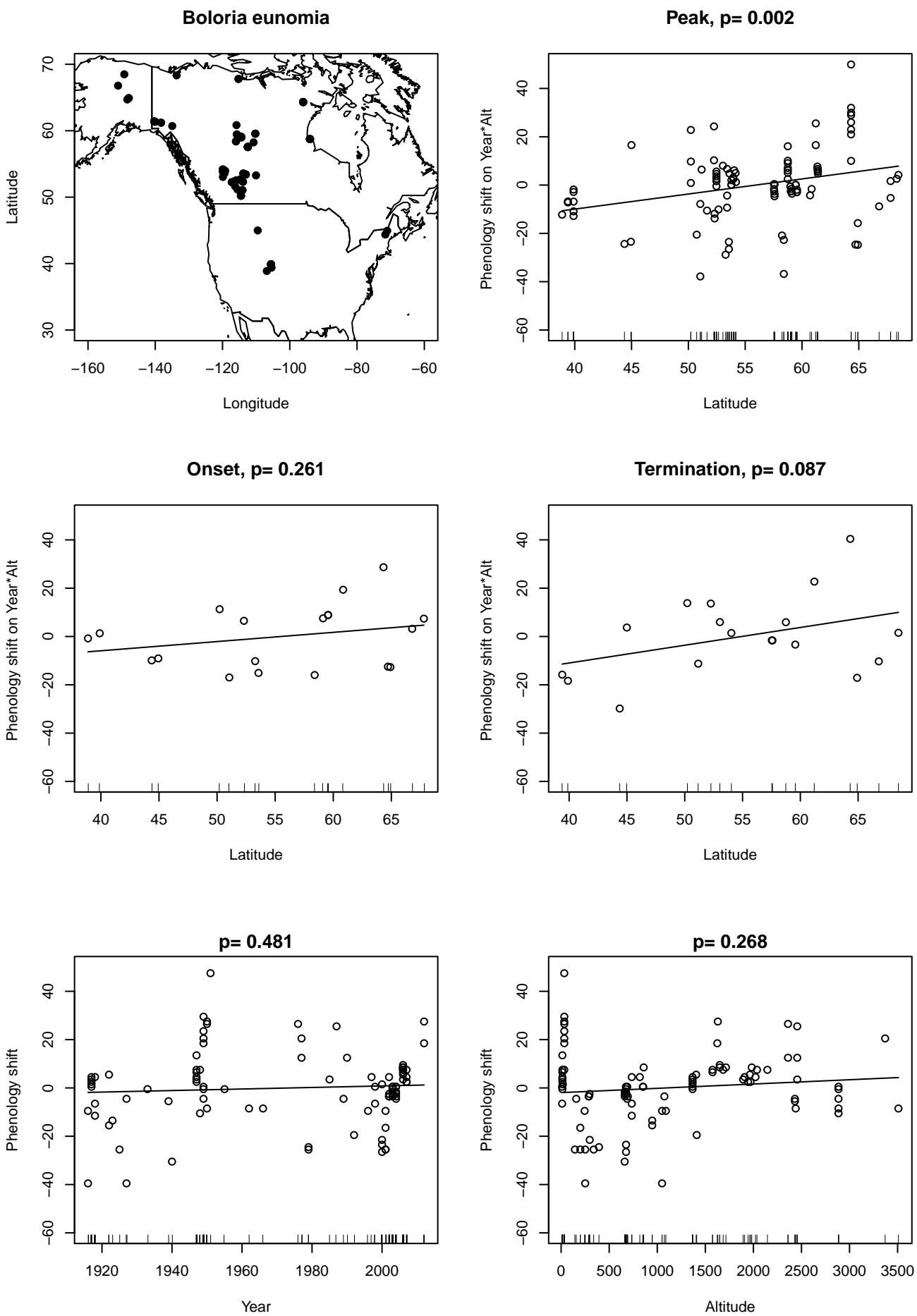


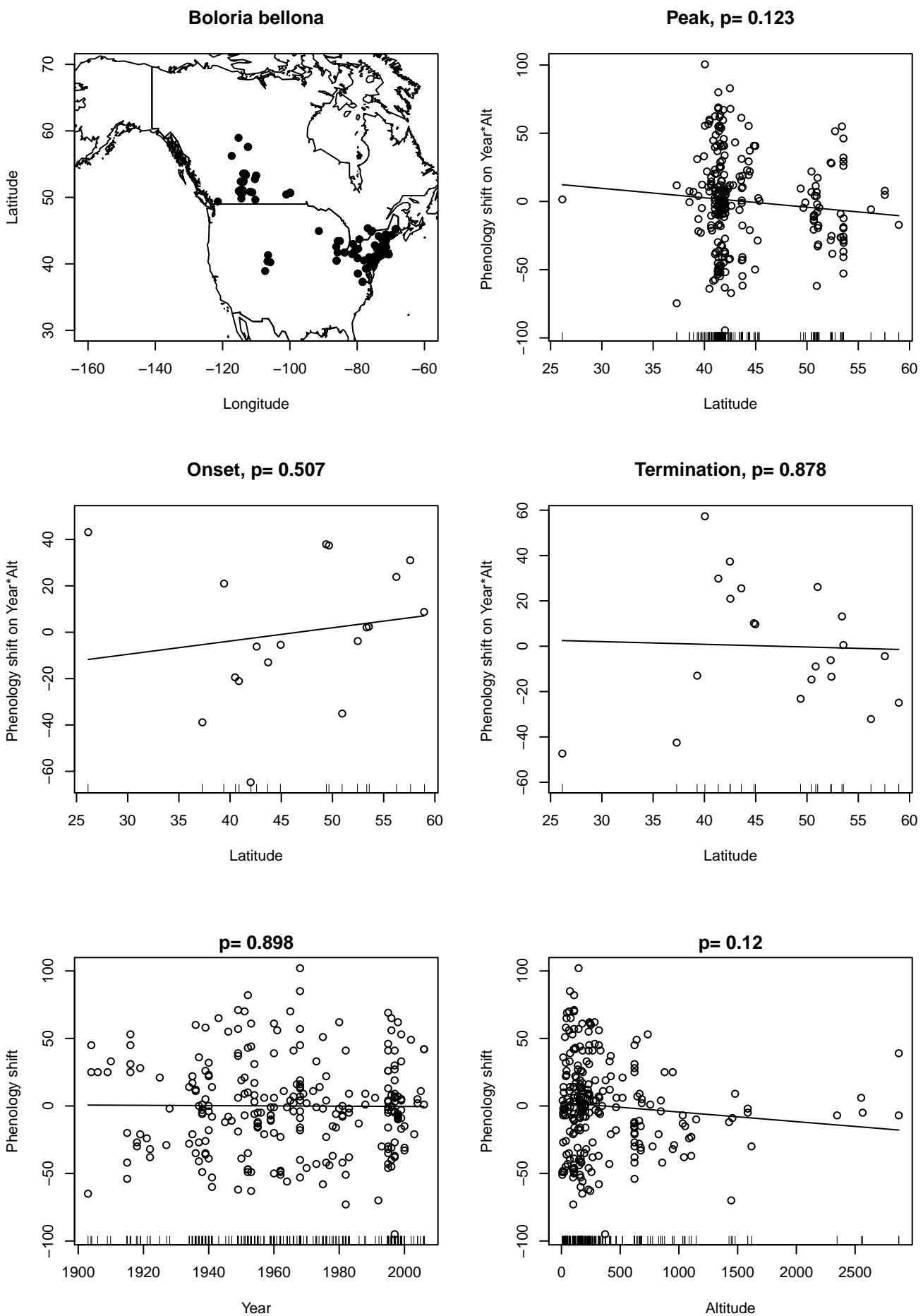
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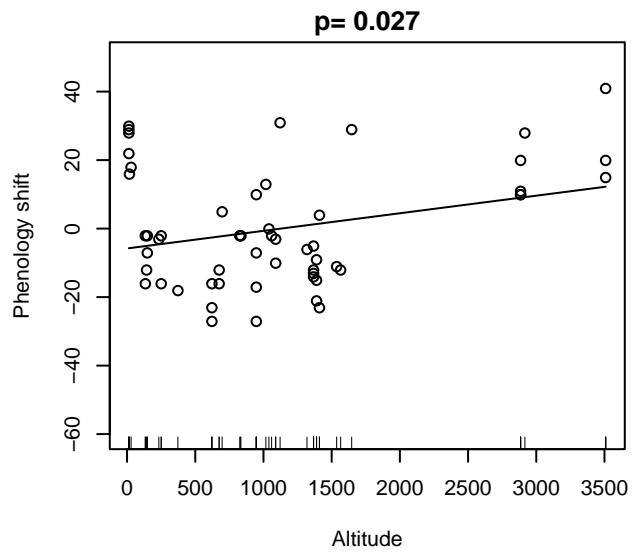
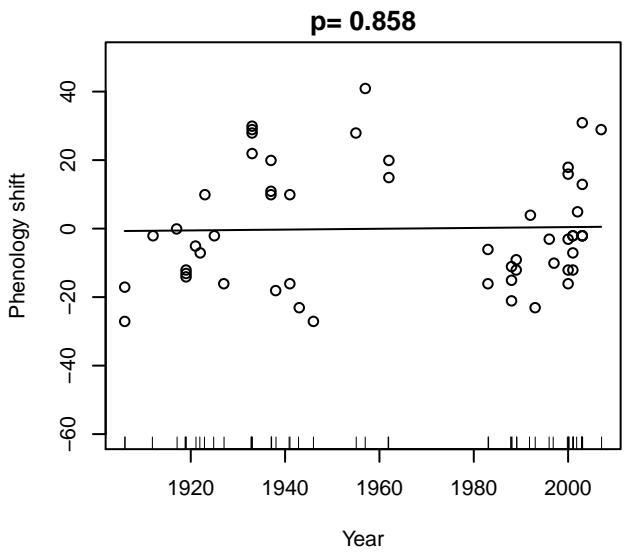
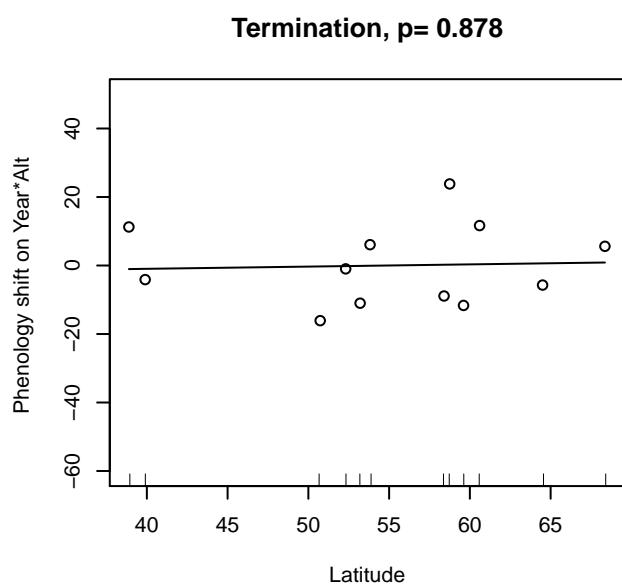
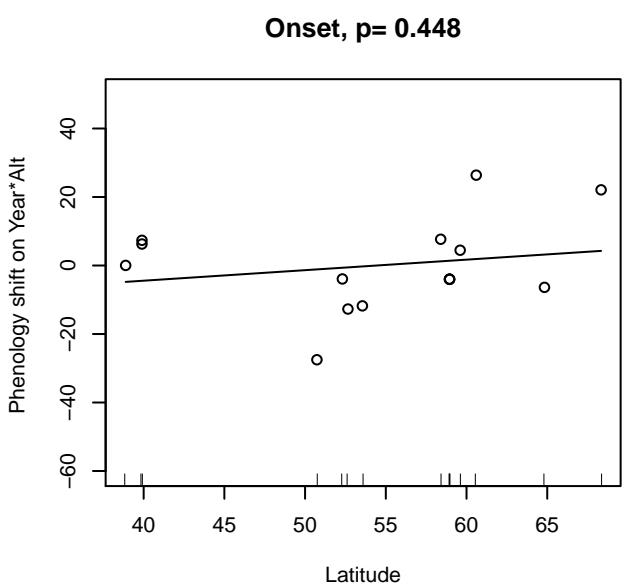
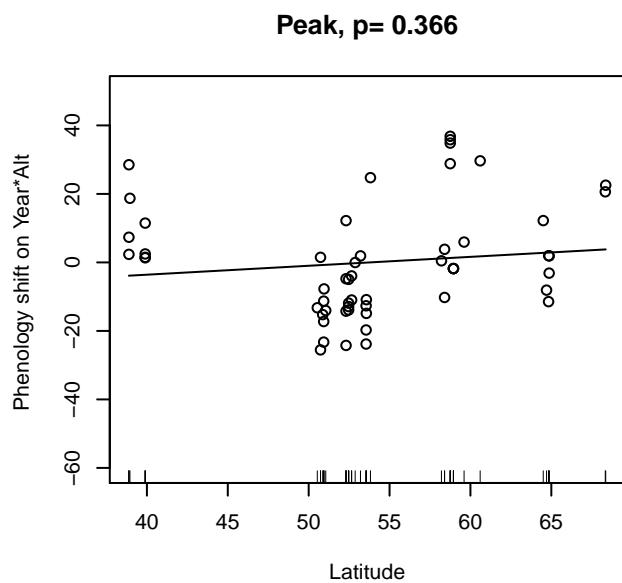
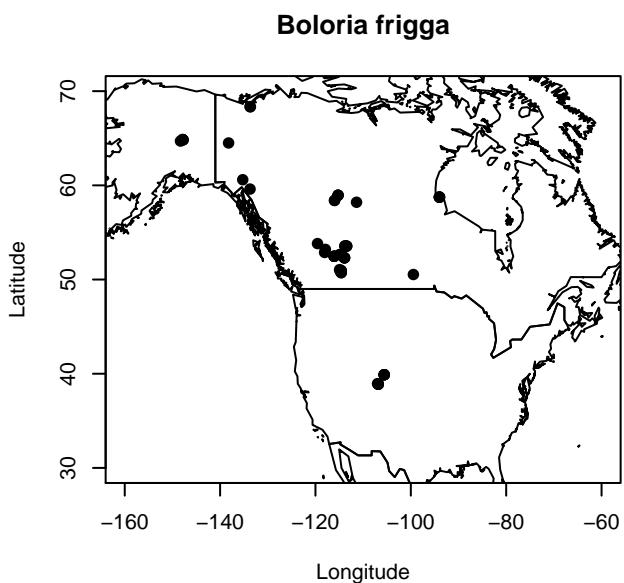


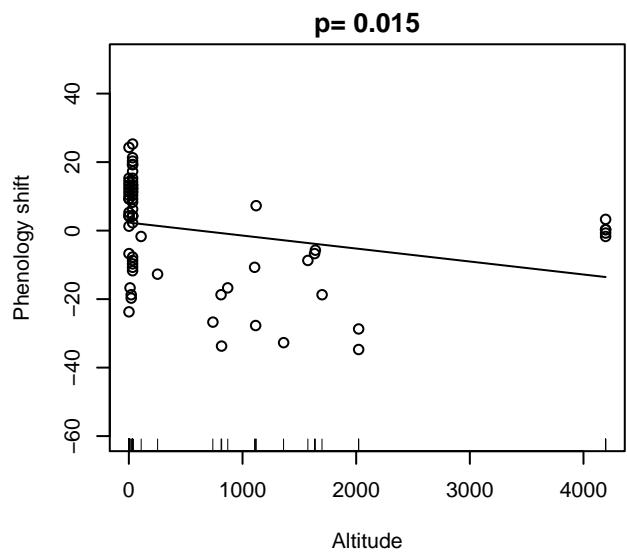
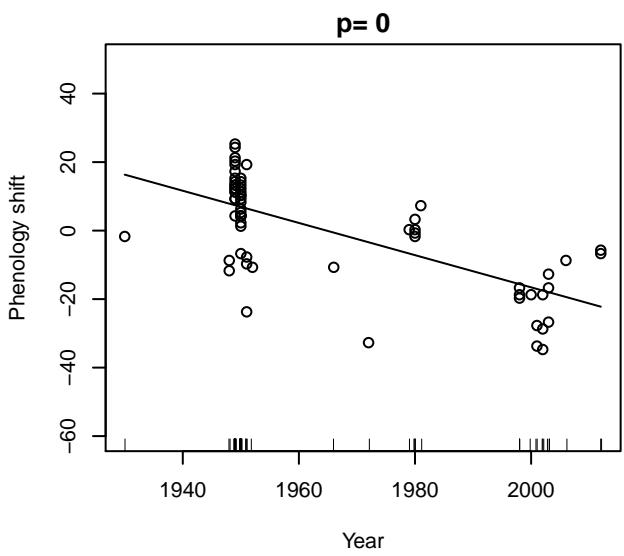
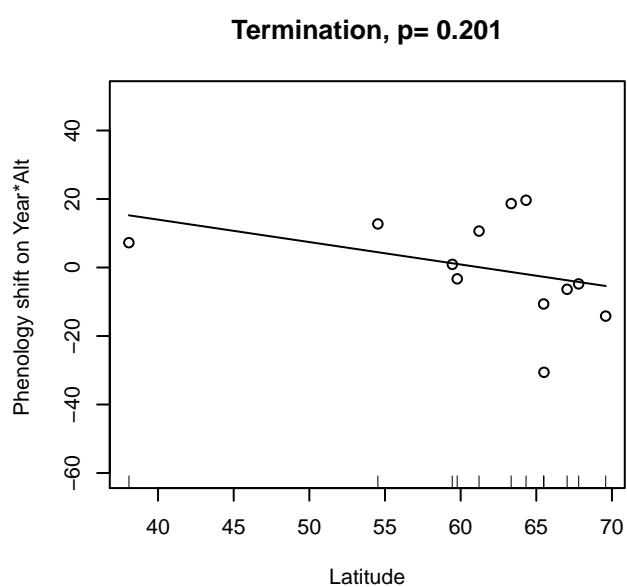
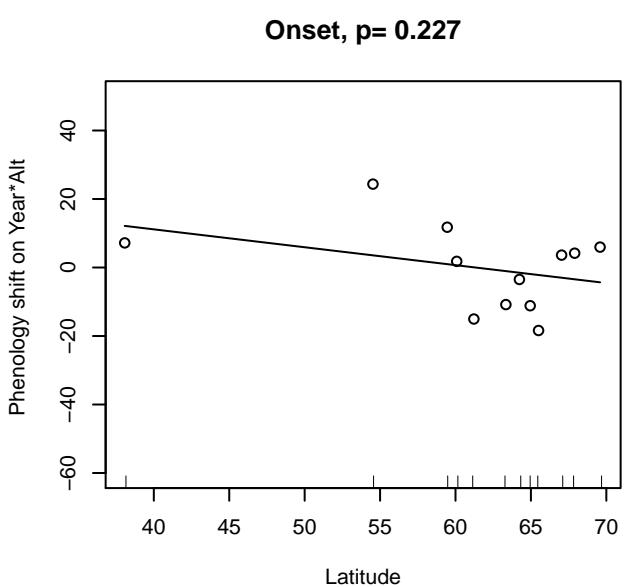
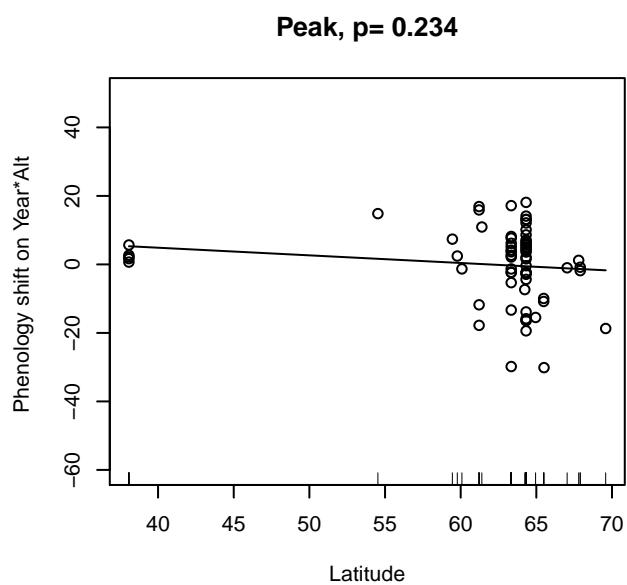
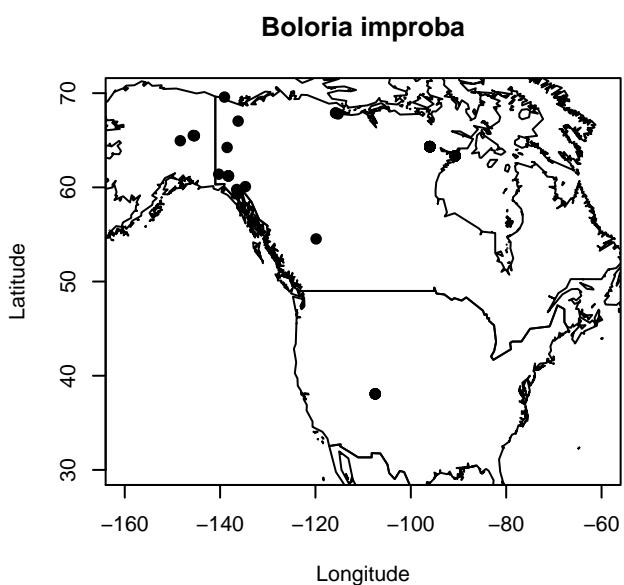


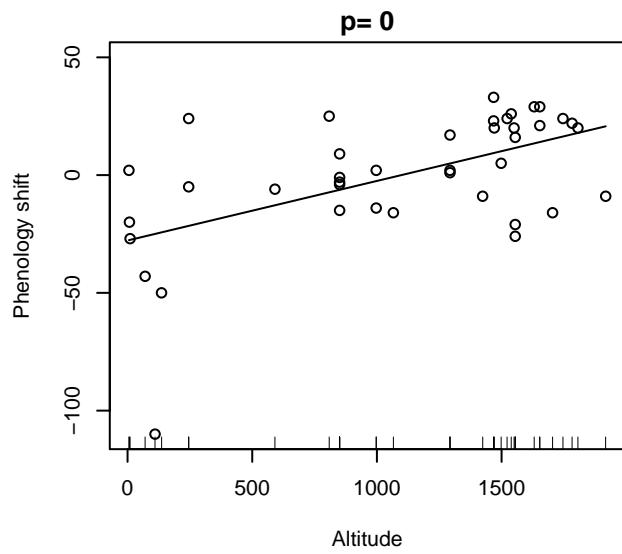
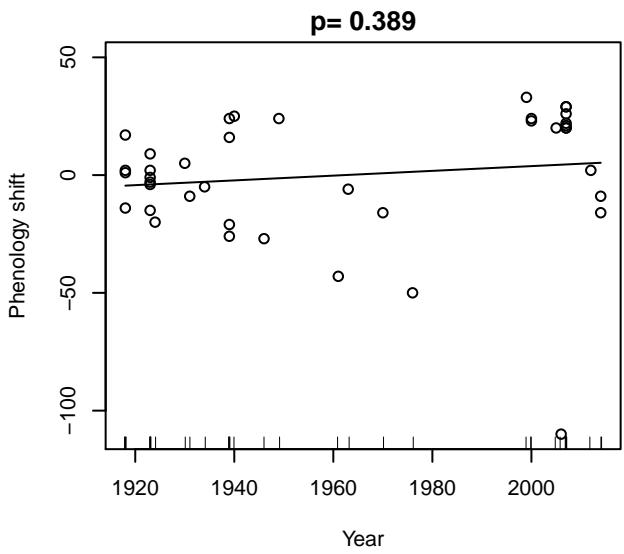
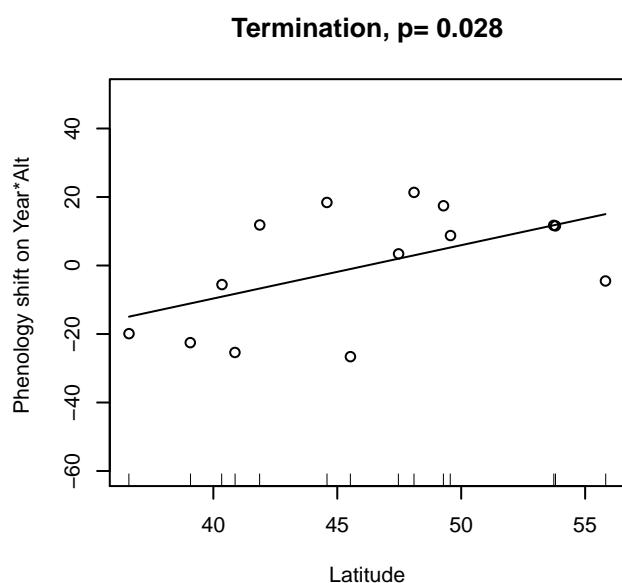
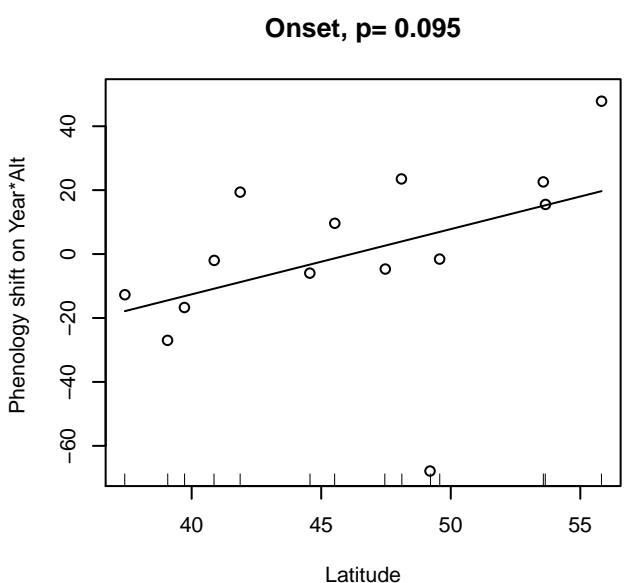
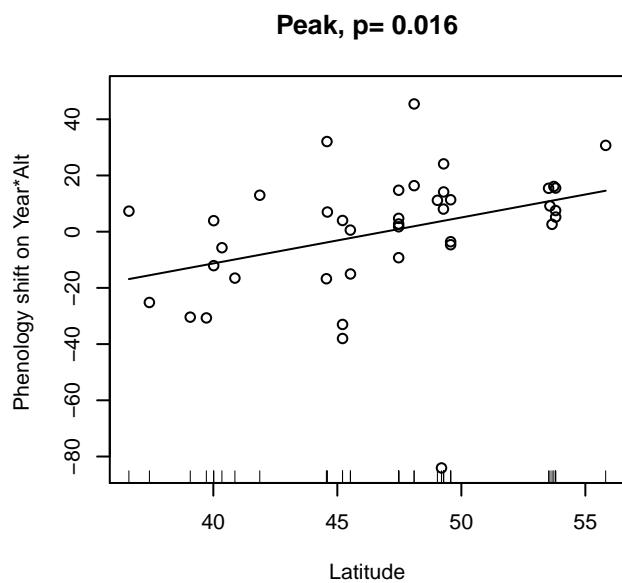
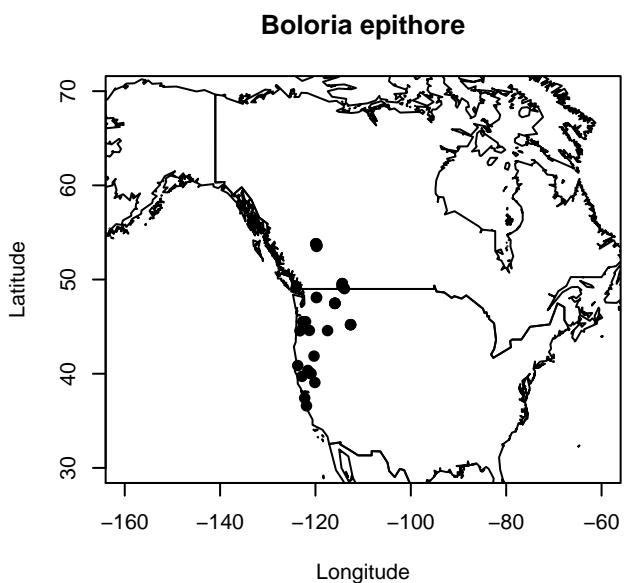


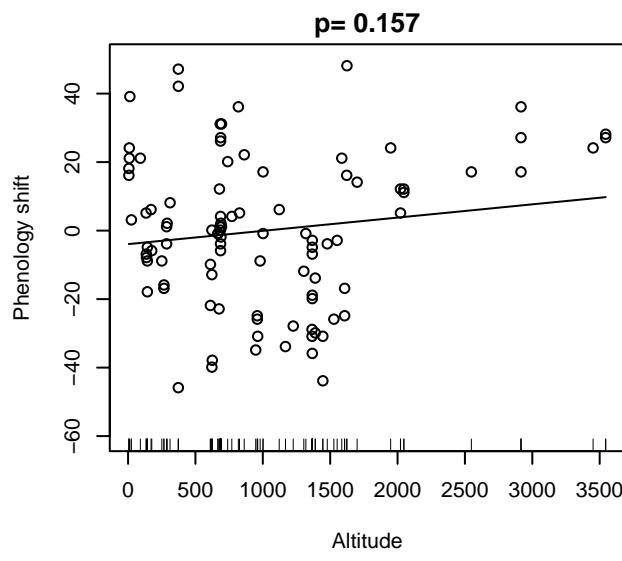
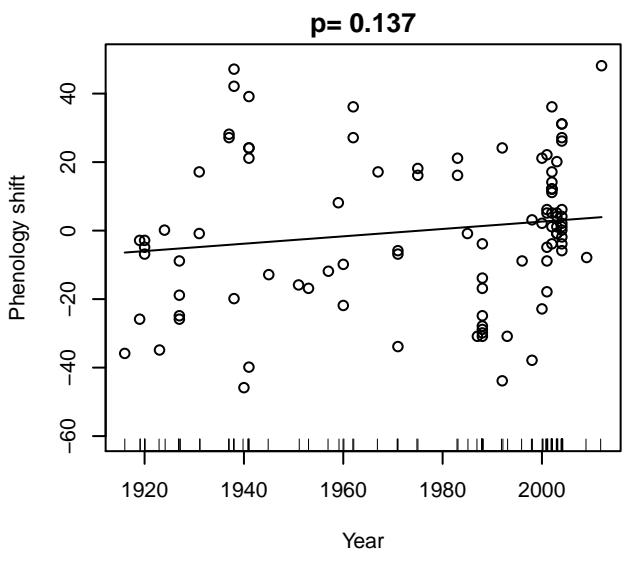
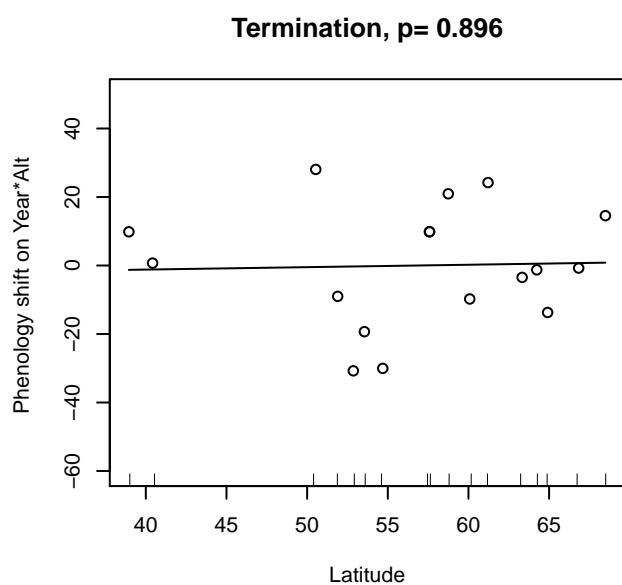
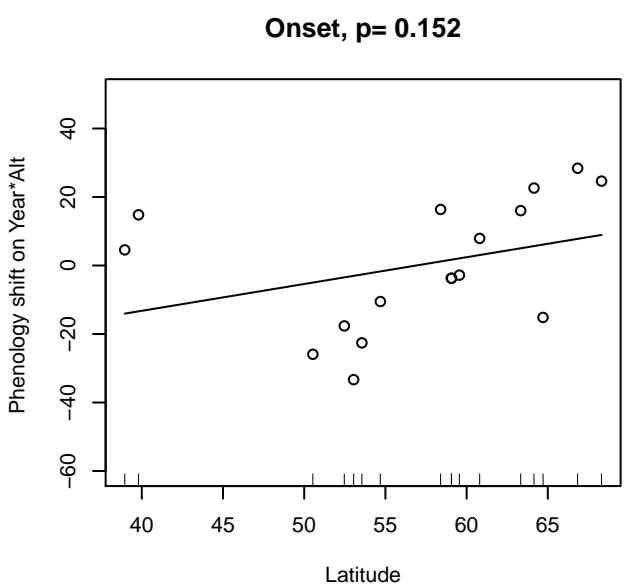
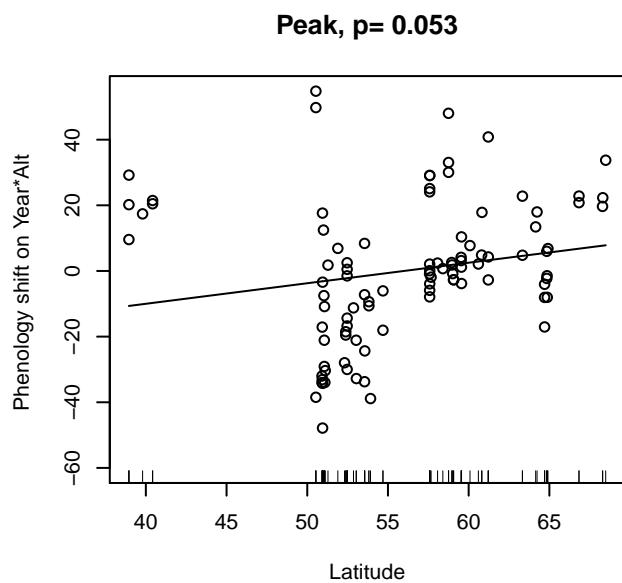
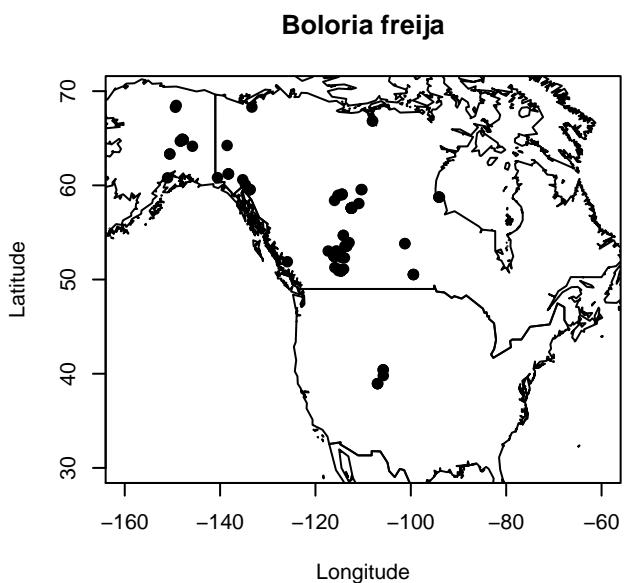


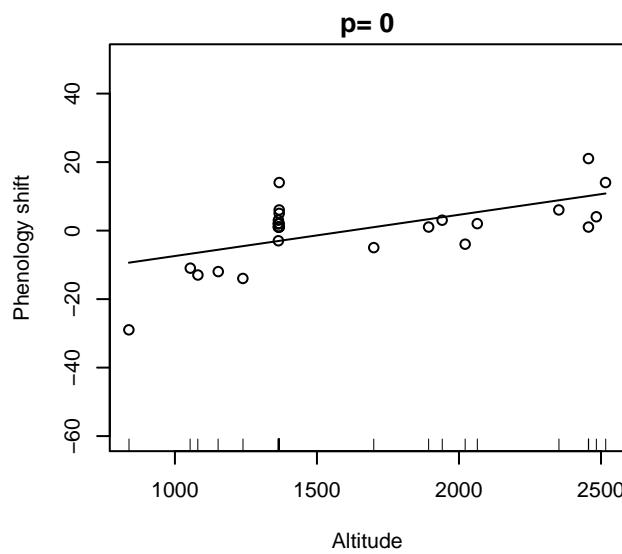
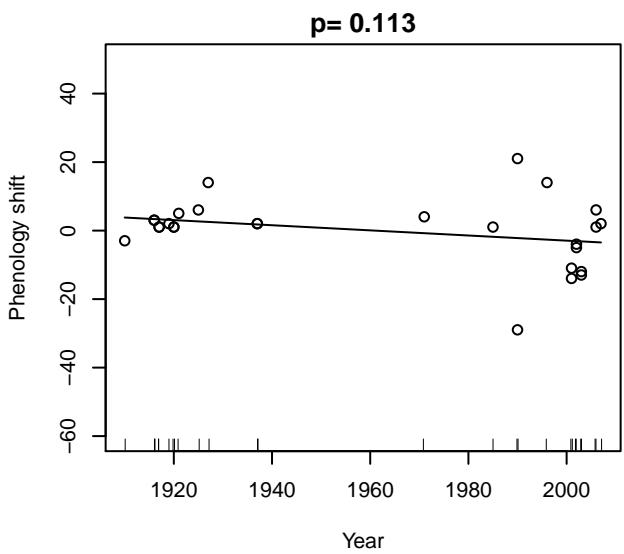
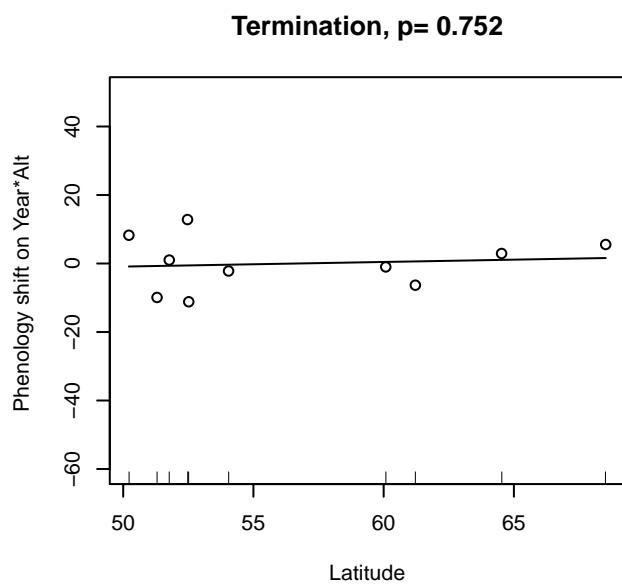
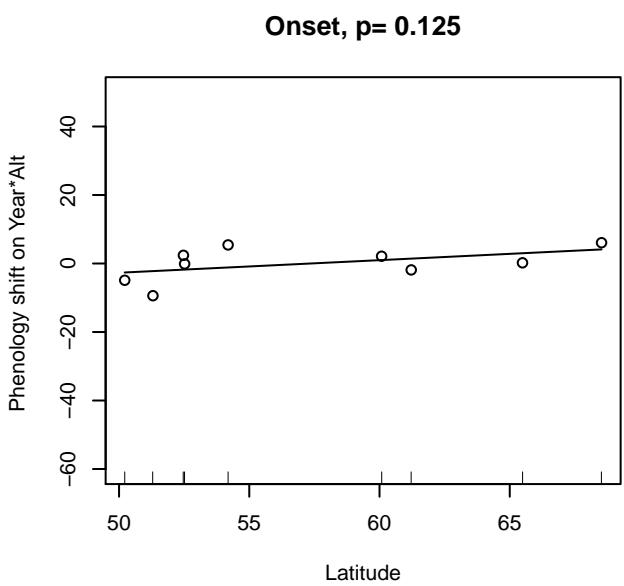
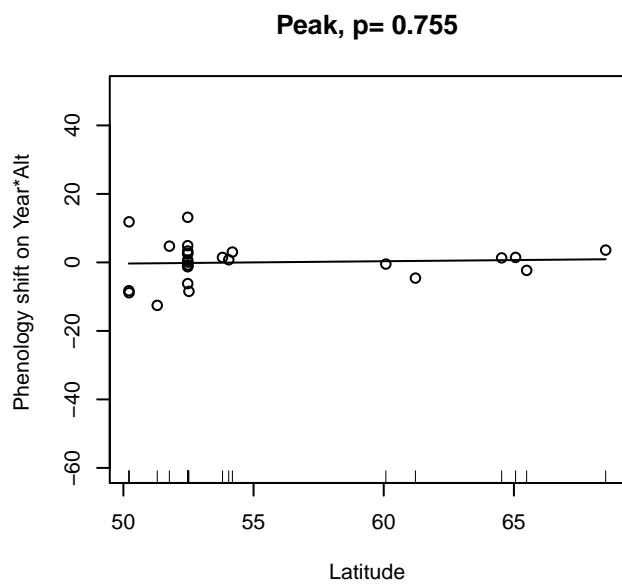
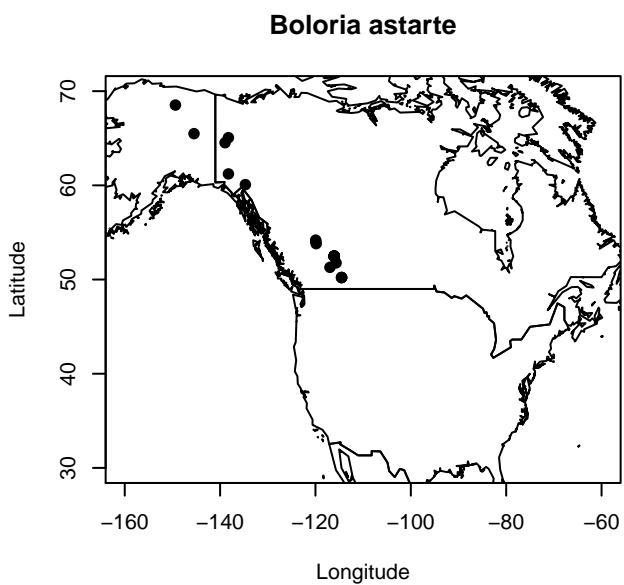


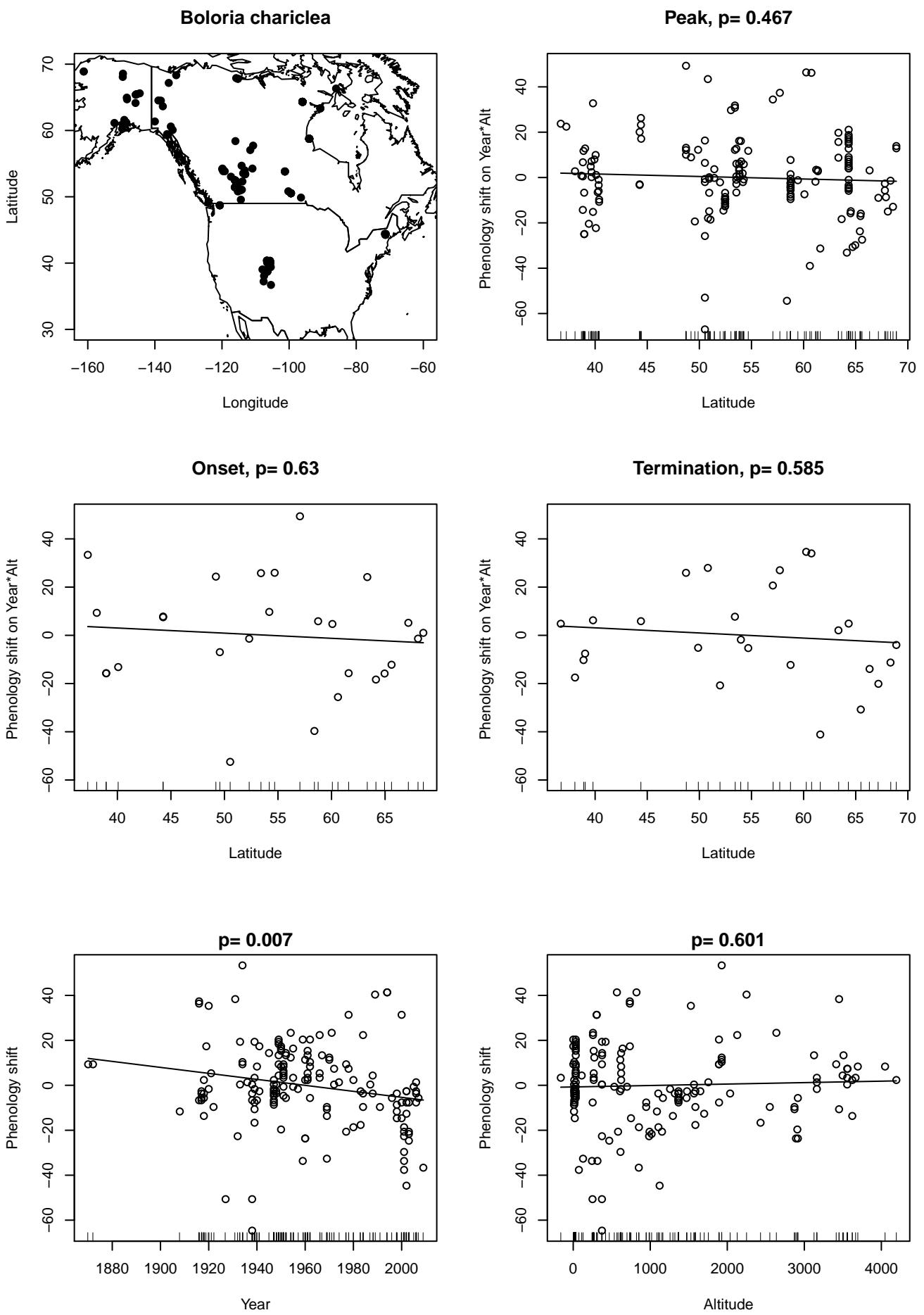


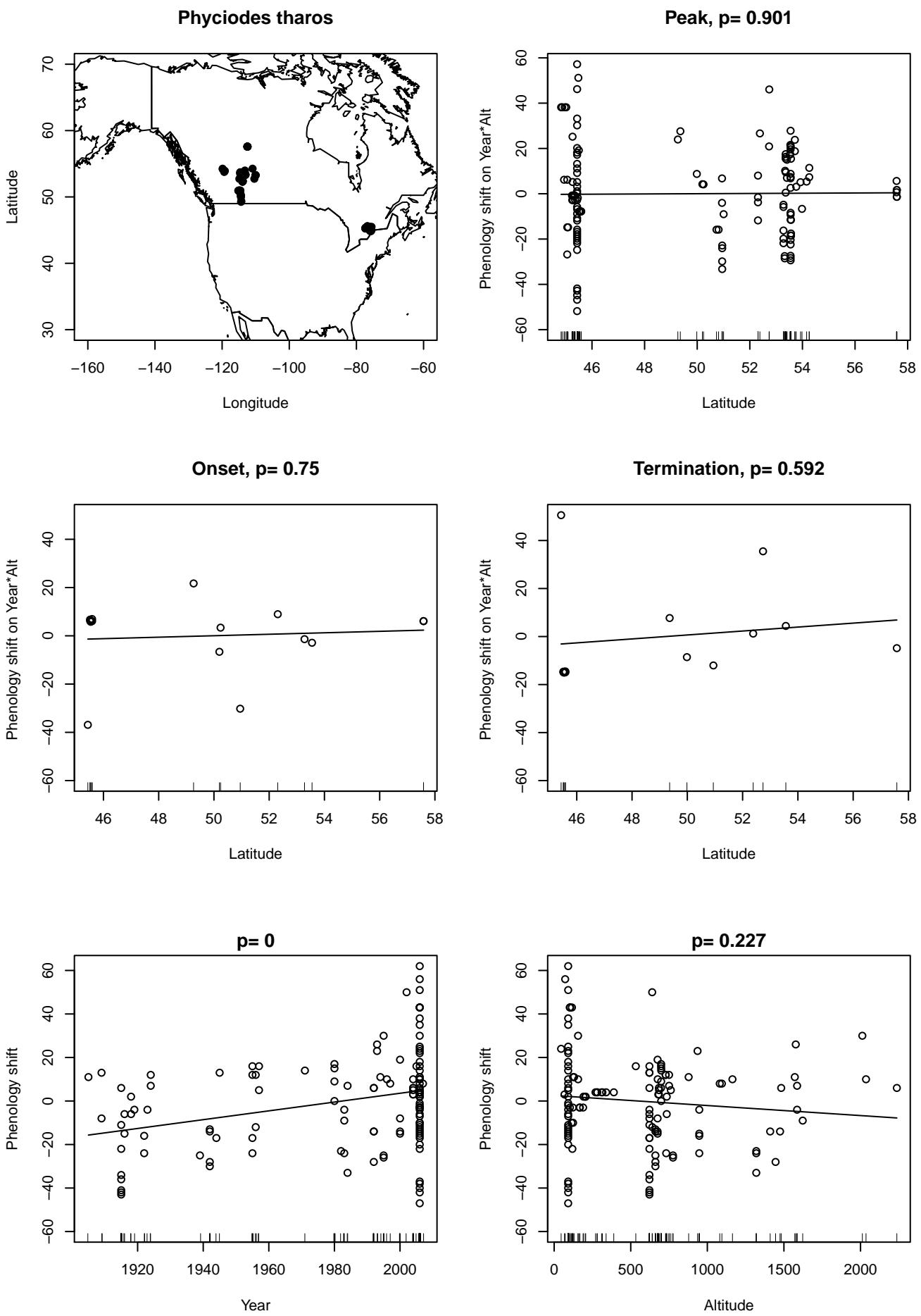


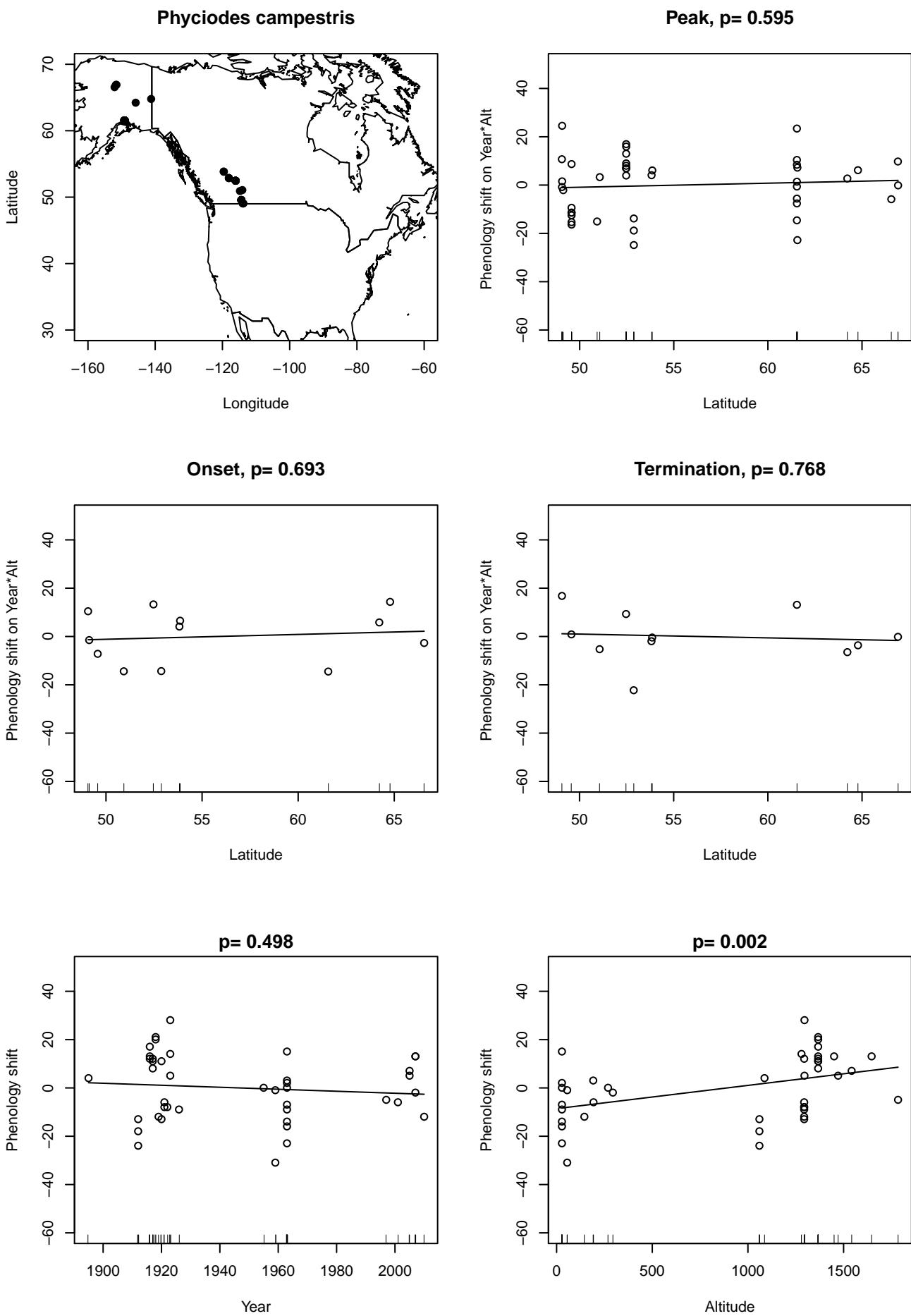


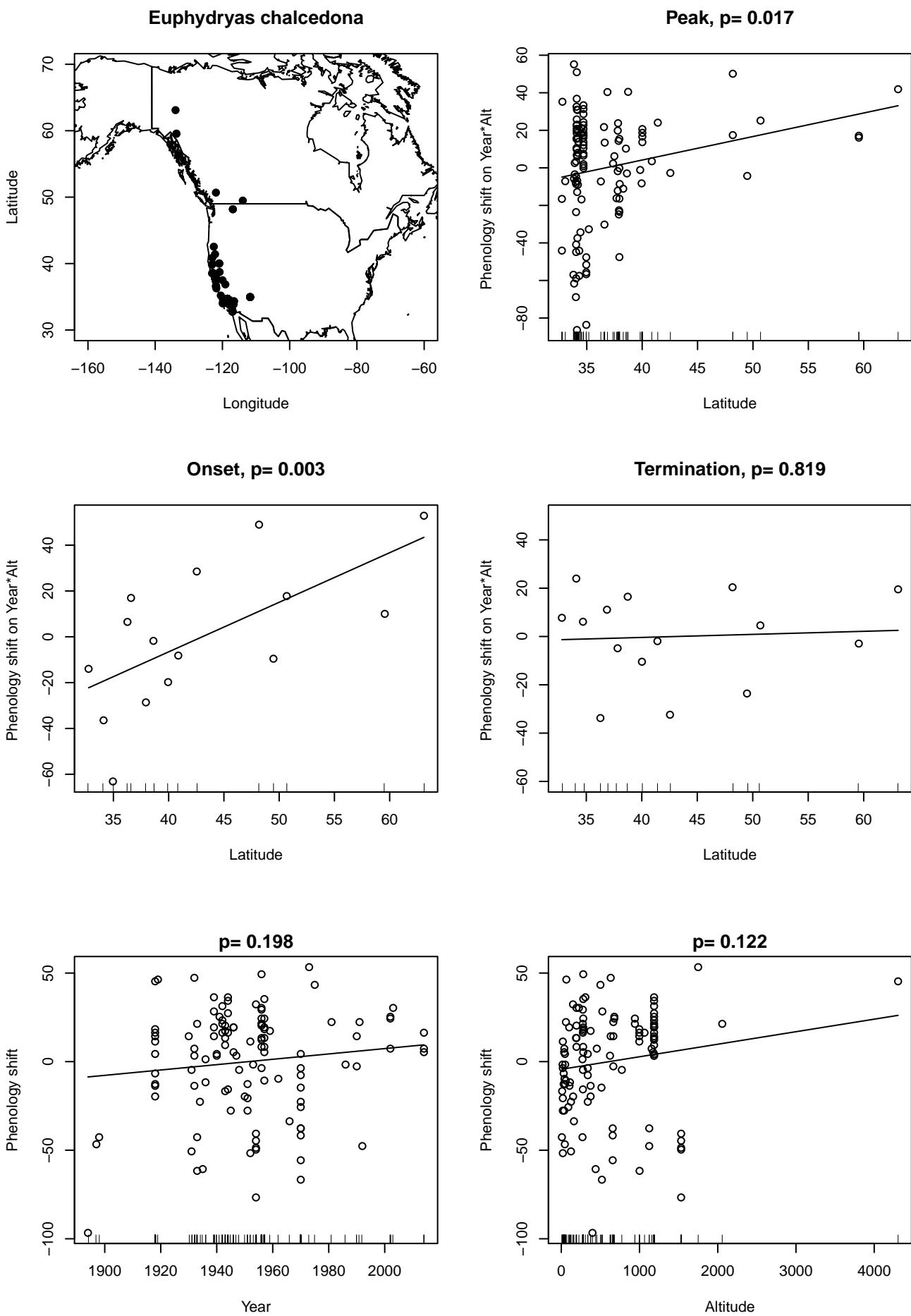


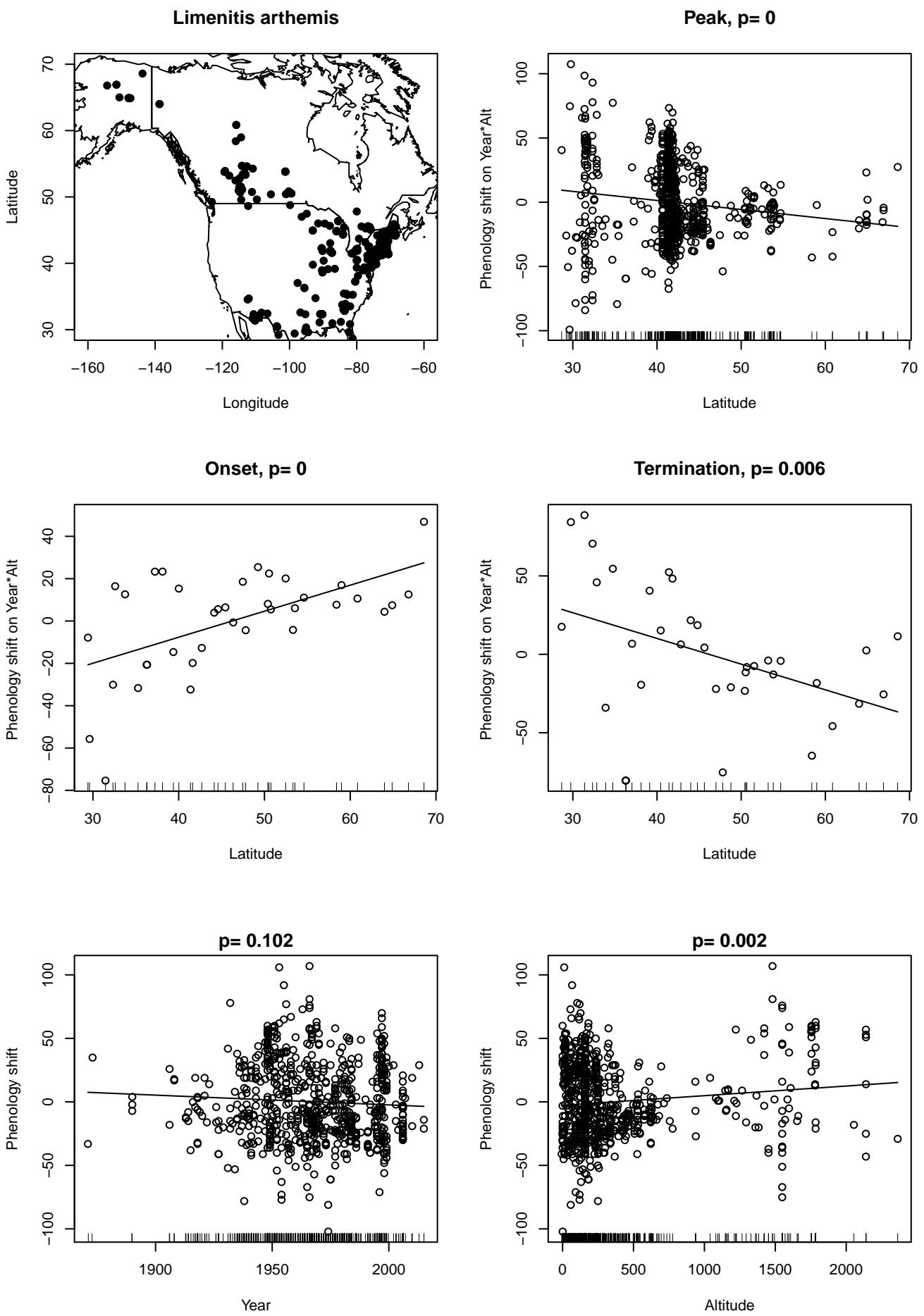


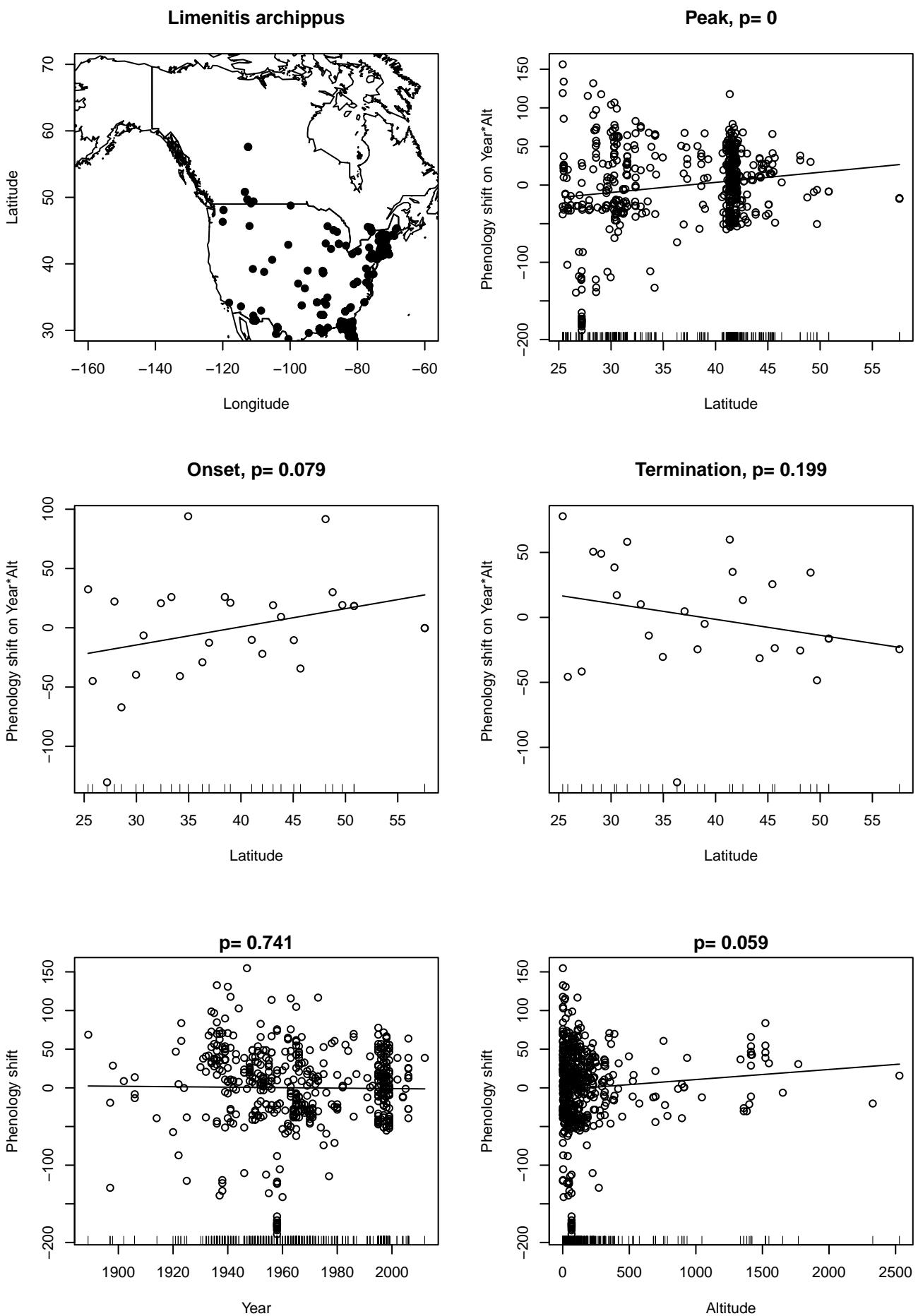


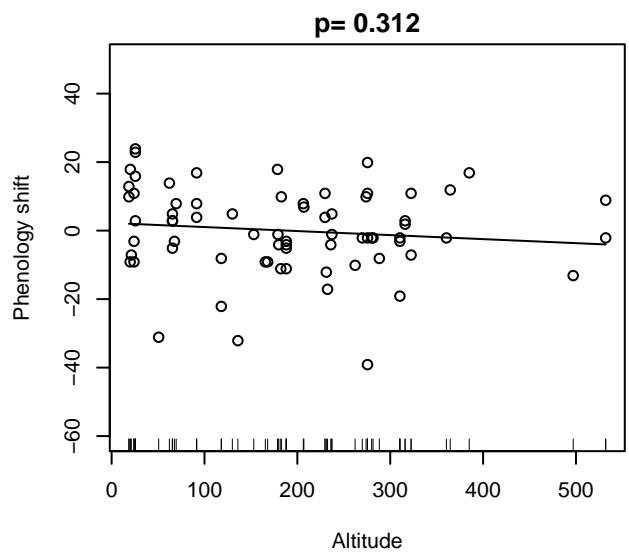
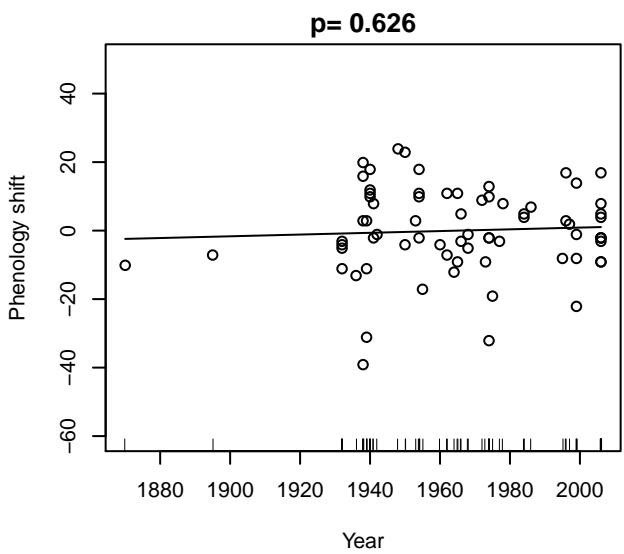
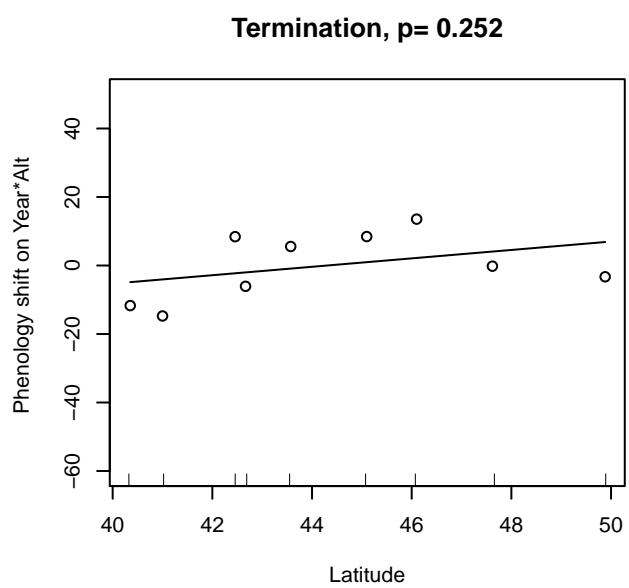
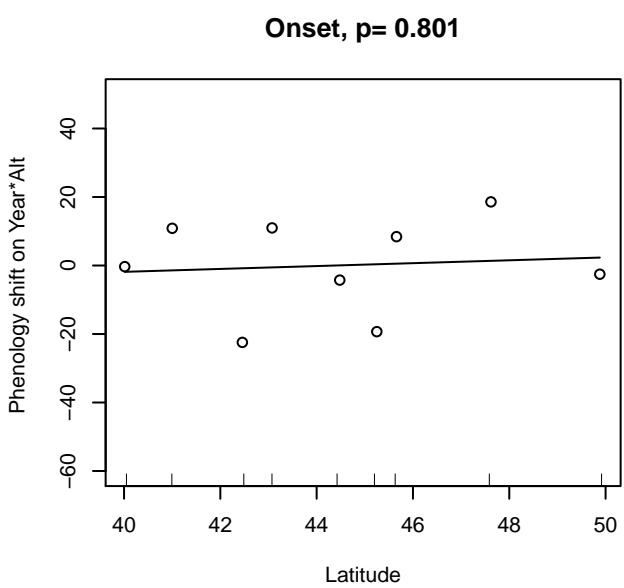
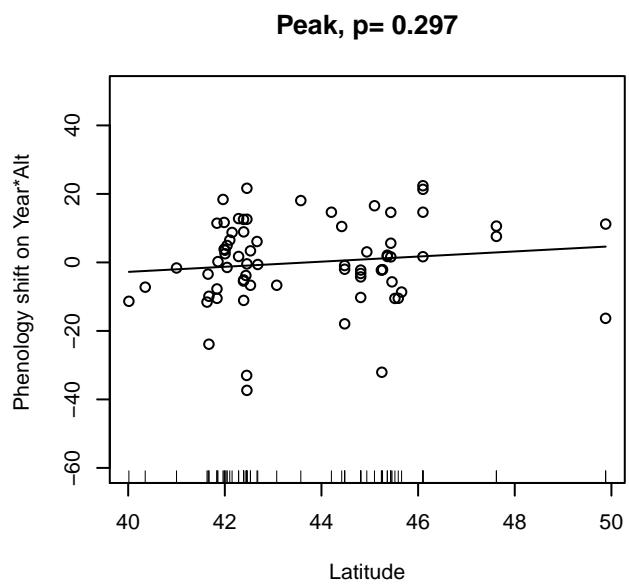
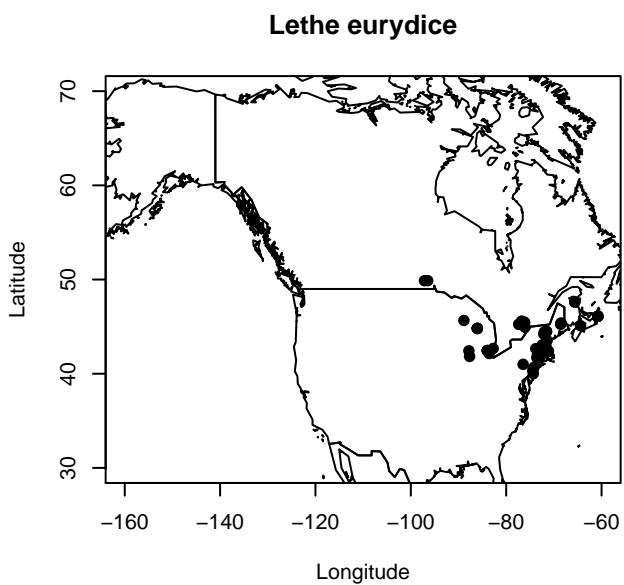


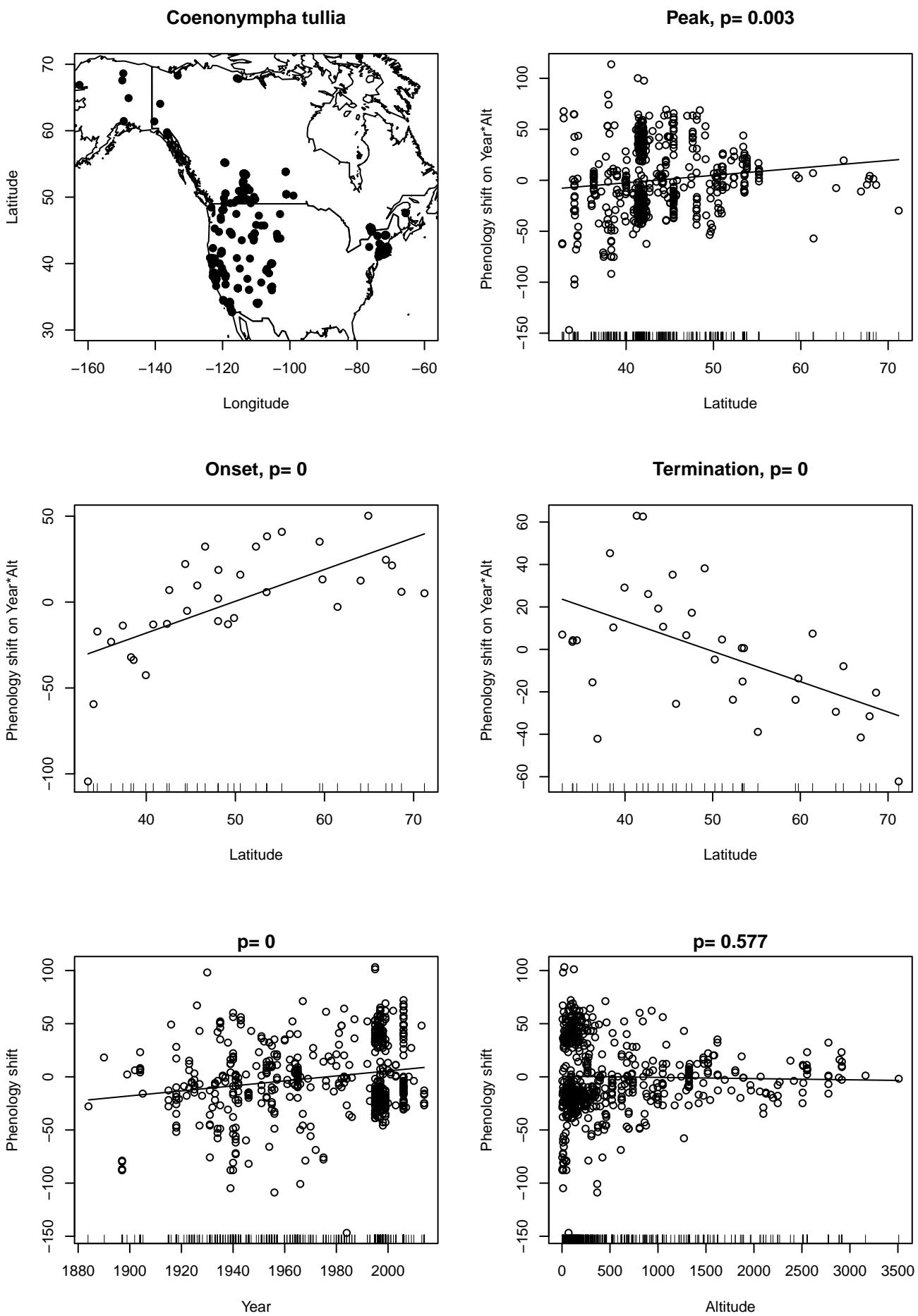


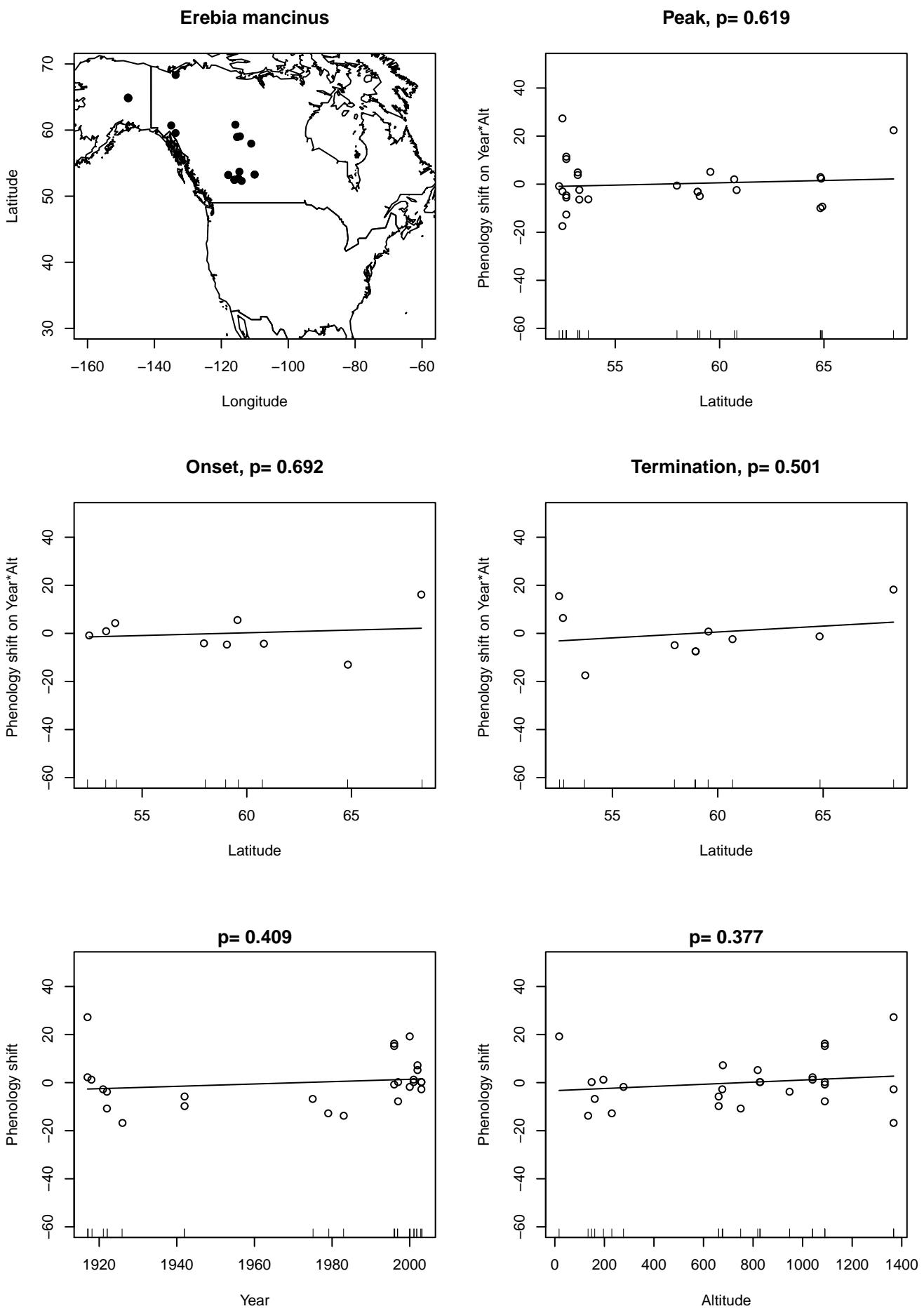


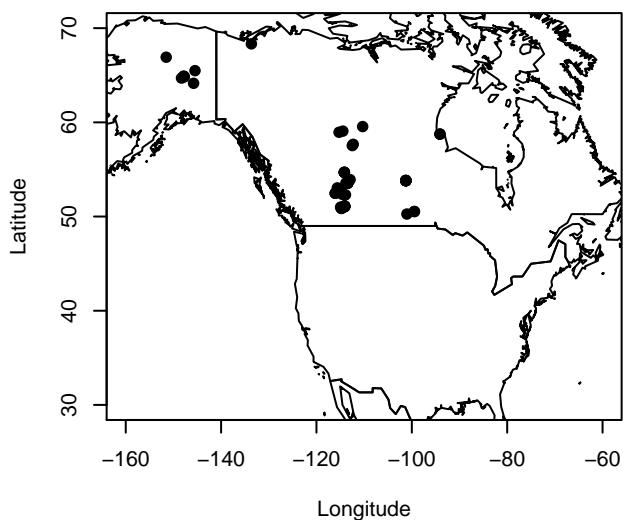
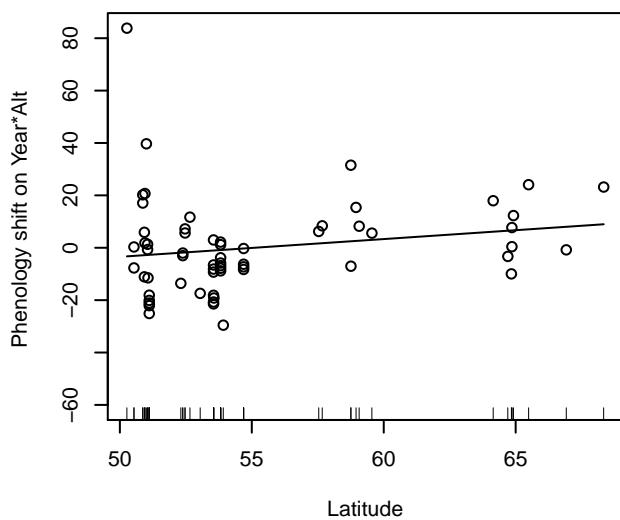
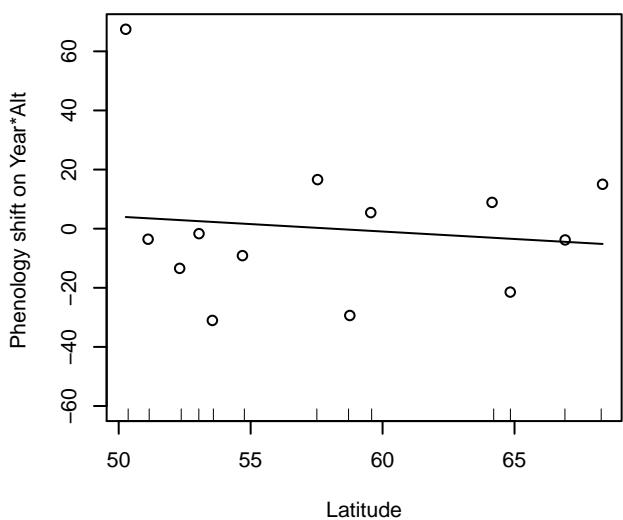
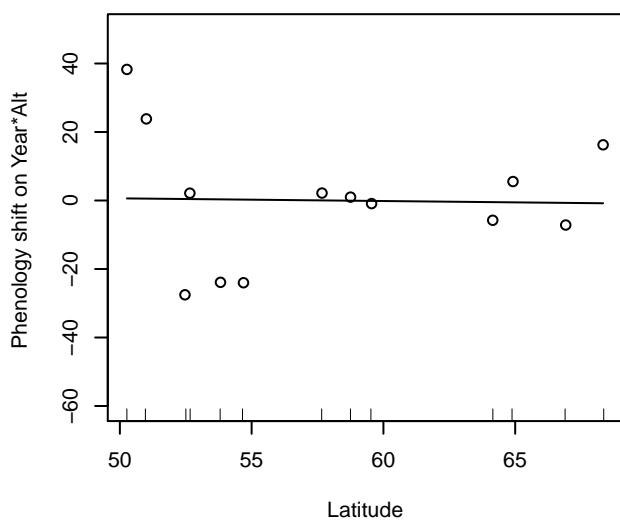
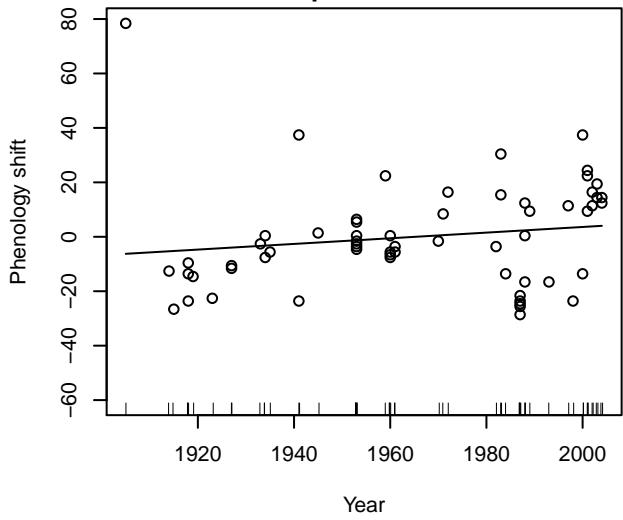










***Erebia discoidalis*****Peak, p= 0.146****Onset, p= 0.678****Termination, p= 0.932****p= 0.212****p= 0.031**