TABLE 1. HEATT EPISODES (AND TWO NON-HEATTS), LIPs, AND SELECTED HOTHOUSE-RELATED EFFECTS

HEATT and extinction age (Ma)	LIP and age of peak eruption (Ma)	Approximate extinction intensity (%) (1)	Transgression (3rd Order)	Warming	Anoxia	Euxinia (sub-photic)	Euxinia (photic zone)	$\delta^{13}C$	$\delta^{34}S$ (sulfate)	$\delta^{15}N$ <2‰
Mid-Miocene Climate Optimum no HEATT	Columbia River Basalt (15.6–16.0) (2)	5	y(3)	y(4)	y(4)					
No HEATT	Ethiopian Highlands (29–31)	5								
Paleocene-Eocene Thermal Maximum (55)	NAIP (58–62)	5	y	y	lim	y	y	n		y(5)
End-Cretaceous (65)	Deccan Traps (66)	30	y	y	lim	y	y	n		y
Cenomanian-Turonian OAE 2 (93)	Ontong Java II (86–94)	10	y	y	y	y	y	p/n	p	y
Early Aptian OAE 1a (120)	Ontong Java I (119–125)	5	y	y	y	y	y	p/n		y
Toarcian-Pliensbachian (183)	Karoo-Ferrar (179–183)	10	y	y	y	y	y	n	p(6)	y
End-Triassic (200)	CAMP (200)	30	y	y	y	y	y	n	p/n	y
End-Permian (251)	Siberian Traps (249–251)	55	y	y	y	y	y	n	p	y
Hangenberg (359)	East European Platform (365)	20	y(7)		y(7)	y(7)	y(7)	p(8)		
Frasnian-Famennian (374)	Viluy Traps (ca. 373) (9)	25	y	y	y	y	y	p/n	p	y
Late Ordovician (444)		30	y	y	y		y	n		y
SPICE (499)		40	y(10)	y(11)	y(10)	y(10)		p(10)	p(10)	
Botomian (ca. 520)	Antrim (ca. 510)	40	y		y			n	p	
Ediacaran (542)		?	y		y			n		y

Note: HEATT—haline euxinic acidic thermal transgression; LIP—large igneous province; OAE—oceanic anoxic events; NAIP—North Atlantic igneous province; CAMP—Central Atlantic magmatic province. See Kidder and Worsley (2010) or Large Igneous Provinces Commission website (www.largeigneousprovinces.org) for more complete coverage of LIPs. Symbols are defined as follows: y—yes; p—positive; n—negative; lim—limited. Most information listed in the boxes is referenced in Kidder and Worsley (2010) except for some new references which are keyed to numbers in parentheses as follows, including new age dates on the Viluy LIP: (1) Rohde and Muller (2005); (2) Barry et al. (2010); (3) John et al. (2011); (4) Kender et al. (2009); (5) Knies et al. (2008); (6) Owens et al. (2010); (7) Marynowski and Filipiak (2007); (8) Kaiser et al. (2006); (9) Courtillot et al. (2010); (10) Gill et al. (2011); (11) Elrick et al. (2011).