

Summary of Models used in PLAsTiCC

(full article in preparation)

model class num ^a : name	model description	contributor(s) ^b	Nevent Gen ^c	Nevent train ^d	Nevent test ^e	redshift range ^f
90: SNIa	WD detonation, Type Ia SN	RK	16,353,270	2,313	1,659,831	< 1.6
67: SNIa-91bg	Peculiar type Ia: 91bg	SG,LG	1,329,510	208	40,193	< 0.9
52: SNIax	Peculiar SNIax	SJ,MD	8,660,920	183	63,664	< 1.3
42: SNII	Core Collapse, Type II SN	SG,LG:RK,JRP:VAV	59,198,660	1,193	1,000,150	< 2.0
62: SNIbc	Core Collapse, Type Ibc SN	VAV:RK,JRP	22,599,840	484	175,094	< 1.3
95: SLSN-I	Super-Lum. SN (magnetar)	VAV	90,640	175	35,782	< 3.4
15: TDE	Tidal Disruption Event	VAV	58,550	495	13,555	< 2.6
64: KN	Kilonova (NS-NS merger)	DK,GN	43,150	100	131	< 0.3
88: AGN	Active Galactic Nuclei	SD	175,500	370	101,424	< 3.4
92: RRL	RR lyrae	SD	200,200	239	197,155	0
65: M-dwarf	M-dwarf stellar flare	SD	800,800	981	93,494	0
16: EB	Eclipsing Binary stars	AP	220,200	924	96,572	0
53: Mira	Pulsating variable stars	RH	1,490	30	1,453	0
6: μ Lens-Single	μ -lens from single lens	RD,AA:EB,GN	2,820	151	1,303	0
991: μ Lens-Binary	μ -lens from binary lens	RD,AA	1,010	0	533	0
992: ILOT	Intermed. Lum. Optical Trans.	VAV	4,521,970	0	1,702	< 0.4
993: CaRT	Calcium Rich Transient	VAV	2,834,500	0	9,680	< 0.9
994: PISN	Pair Instability SN	VAV	5,650	0	1,172	< 1.9
995: μ Lens-String	μ -lens from cosmic strings	DC	30,020	0	0	0
TOTAL	Sum of all models		117,128,700	7,846	3,492,888	—

Model Contributors:

AA: Arturo Avelino (Harvard U.)
 EB: Etienne Bachelet (LCO)
 DC: David Chernoff (Cornell U.)
 MD: Mi Dai (Rutgers U.)
 SD: Scott Daniel (U.Washington)
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 JRP: Justin Pierel (U. South Carolina)
 AP: Andrej Prsa (Villanova U.)
 VAV: Ashley Villar (Harvard U.)

^anum>990 were all in unknown class 99 during the competition. An extra digit is added here to distinguish each model.

^bCo-author initials. Colon separates independent methods.

^cNumber of generated events, corresponding to the true population without observational selection bias.

^dLabeled subset from spectroscopic classification. 0 \rightarrow predicted from theory, not convincingly observed, or very few observations.

^eUnlabeled sample. PLAsTiCC goal is to label this sample.

^fRedshift > 0 for extragalactic models; Redshift = 0 for Galactic models.

Unblinded Data Files: <http://doi.org/10.5281/zenodo.2539456>

Simulation Source code: <http://snana.uchicago.edu>

(model libraries will be released with article)

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