

The SNID Database

(as of 24 Aug 2007)

The following tables give information on the content of the present SNID database:

- Table 1 contains the database of supernova templates,

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TABLE 1
 SNID SUPERNOVA DATABASE

IAU Name (1)	Subtype (2)	Ages (3)	Ref. (4)
1979C	IIL	10,11,13,30+(2)	Wheeler
1980K	IIL	7,9,11,12,30+(4)	Wheeler
1981B	Ia-norm	-1,0,16,17,19,20,23,24,27,30+(4)	1,2
1983N	Ib-norm	4,12,30+(1)	Wheeler
1983V	Ic-norm	-9,-7,-4,4,12-18,30+(1)	Wheeler
1984L	Ib-norm	8,9,12,13,28,30+(7)	Wheeler
1986G	Ia-91bg	-4,-3(2),-2(2),-1,0(2),1(2),2,21-23,30+(14)	1,Asiago
1987A ^a	II-pec	2,4-9,11-27,31-58,60+(43)	3,4
1988L	Ib-norm	$N = 2$	5
1989B	Ia-norm	-6,-1,4,6,8,10,12(2),13,14,16-25,30+(3)	1,6
1990B	Ic-norm	4,5,6(2),7,9,10,15,22,28(2),30+(10)	5,7,CfA
1990I	Ib-norm	11,19,30+(6)	8
1990K	IIL	$N = 14$	9
1990N	Ia-norm	-13(2),-6,3,5,15,18,30+(9)	10-12
1990O	Ia-norm	-[7-5],0,19,20	CfA
1990U	Ic-norm	11,12,30+(4)	5
1990aa	Ic-norm	$N = 3$	5
1991A	Ic-norm	$N = 8$	5
1991M	Ia-norm	3,25,26,28,30+(2)	12,CfA
1991N	Ic-norm	$N = 8$	5
1991T	Ia-91T	-12,-10,-9,-[7-5],0,11,16,19,25,30+(3)	13-15
1991ar	Ib-norm	$N = 3$	5
1991bg	Ia-91bg	2,3(3),15,16,19(2),20,26,30+(16)	12,16,17
1992A	Ia-norm	-5(2),-1,0,2,3,6(2),7,9(2),12(2),16,17,24,28	18
1992H ^b	IIIP	12,25,30+(8)	19,20
1992ar	Ic-norm	3	CfA
1993J	IIb	-18(2),-17,-16,-11,-[5-3],-2(3),1,3(2),4(2),5-7,11-13,17,20,24,29,30+(48)	21-24
1993ac	Ia-norm	7	CfA
1994D	Ia-norm	-11(2),-10(2),-9,-8,-6,-5(2),-4(2),-3,-2,0,2,3,10-12,13(2),14,15(3),16,17(2),19,24,26,30+(11)	25,26,CfA
1994I	Ic-norm	-6(2),-4,-3,0-3,21-24,26,30+(5)	27,28
1994M	Ia-norm	3-5,8,13,30+(1)	12,CfA
1994Q	Ia-norm	12,19,30+(1)	12,CfA
1994S	Ia-norm	-3(2),1,21	12,CfA
1994T	Ia-norm	1	CfA
1994ae	Ia-norm	1,2,3(2),4,6,9(2),10,11,30+(7)	CfA
1995D	Ia-norm	4,6,8,10,11,14,16,30+(3)	CfA
1995E	Ia-norm	-2,0,2,7,10,30+(1)	CfA
1995F	Ic-norm	$N = 5$	5,CfA
1995ac	Ia-norm	24	CfA
1995al	Ia-norm	17,25	CfA
1995bd	Ia-norm	11,21,30+(2)	CfA
1996C	Ia-norm	8	CfA
1996L	IIn	8,30+(6)	29
1996X	Ia-norm	-3,-2,-1(2),0,1(2),2(2),3,5-7,8(2),9,13,21,23,25,30+(1)	30,CfA
1996cb	IIb	-18,-17,-2,1,5,7(2),27,29,30+(15)	5,CfA
1997br	Ia-91T	-9,-8,-7(2),-6(2),-4,8,9,12,17,18,21,24,30+(6)	31,CfA
1997cn	Ia-91bg	4,29,30+(1)	32,CfA
1997cy	IIn	$N = 11$	33
1997dc	Ib-norm	$N = 1$	5
1997dd	IIb	$N = 3$	5,CfA
1997dq	Ic-norm	$N = 10$	5,CfA
1997ef	Ic-hyper	-14,-[12-9],-6,-5(2),-4,7,13,14,17,22,24,27,30+(10)	5,35,CfA
1997ei	Ic-norm	$N = 2$	5
1998S	IIn	-13(2),-2,1,2(2),3,10,11,13,14,16,30+(44)	24,36,37
1998T	IIb	$N = 1$	5
1998aq	Ia-norm	-9,-8,0-7,19,21,30+(15)	34,38
1998bu	Ia-norm	-[3-1],1,9-14,28,29,30+(21)	34,39
1998bw	Ic-hyper	8,9,12-14,16,18,19,21,24,26-28,30+(8)	40
1998dt	Ib-norm	0,1,4,7,8,,12,17,30+(1)	5,CfA
1999aa	Ia-91T	-9,-4,-1,3,8,15,21,26,29,30+(4)	41
1999ac	Ia-91T	-14,-10,1,3,9,12,17,29,30+(3)	42
1999aw	Ia-91T	-1,0,3,30+(1)	43
1999by	Ia-91bg	-[5-3],3-8,25,29,30+(3)	34,44
1999di	Ib-norm	$N = 3$	5
1999dn	Ib-norm	$N = 3$	5
1999ee	Ia-norm	-9,-7,0,2,7,11,16,20,22,27,30+(2)	45
1999em	IIIP	-4(2),-[3-1],0(2),1,2,5,6(2),7,9,11,16,27,30+(26)	46-48
1999ex	Ic-norm	-5,0,9	45
1999gi	IIIP	-7,-5,-4,19,24,27,30+(5)	49
2000E	Ia-norm	-6,-3,-1,8,30+(1)	50
2000H	IIb	28,29(2),31-34,40+(5)	51,CfA
2000cx	Ia-pec	-[3-1],0-2,6-8,10,12,15,19,22,24,26,28,30+(9)	52
2001el	Ia-norm	-4,1,9,18,30+(1)	53
2002ap	Ic-hyper	-6,-5,-2,-1,0-4,5(2),6,7(2),10,12,13,26,27,30+(15)	54,55,CfA

TABLE 1 — *Continued*

IAU Name (1)	Subtype (2)	Ages (3)	Ref. (4)
2002bo	Ia-norm	-13(2), -12(2), -[9–6], -5(2), -4(2), -3(3), -2(2), -1(3), 0, 6, 11–22, 24, 28, 29(2), 30+(12)	56, CfA
2002cx	Ia-pec	-5, -2, 10, 14, 18, 23, 24, 30+(1)	57
2002er	Ia-norm	-11, -[9–5], -4(2), -[3–1], 2–4, 6, 9, 11, 12, 16(2), 20, 24, 30+(2)	58
2002ic ^c	Ia-csm	6, 9, 30+(3)	59
2003cg	Ia-norm	-8(2), -[7–5], -2(2), -1, 2, 5, 7, 10–12, 16, 19, 23(2), 26, 29, 30+(4)	60
2003du	Ia-norm	-12, -10(3), -[9–5], -3, -1(2), 0–2, 3(2), 4, 5, 8–11, 14, 17–19, 20(2), 22(2), 24, 26, 27, 29, 30+(24)	61, 62
2003fg ^d	Ia-pec	2	63
2004S	Ia-norm	2, 8, 13, 14, 18, 30+(2)	64
2004aw	Ic-norm	-5, -3, -2(2)–1, 0, 2(2), 3–5, 12, 18(2), 19, 21, 23, 25, 26, 30+(6)	65, CfA
2004dj ^e	IIP	N = 15	66
2004eo	Ia-norm	-11, -6, -3, 2, 7, 11, 12, 14, 21(2), 23, 30+(8)	67
2004et	IIP	-[3–1], 1, 2, 4, 6, 9, 10, 12, 15, 20, 23, 24, 25(2), 27, 30+(31)	68, CfA
2005bf ^f	Ib-pec	-28, -26–25(2), -24, -22(2), -19, -8, -[6–2], -1(2), 1, 2, 3(2), 5, 6, 8, 23(2), 25, 26, 29, 30+(2)	69, 70
2005cs	IIP	-2, -1, 0, 5, 7–10, 26, 27, 30+(1)	71, 72
2005gj	Ia-csm	-12, -2, 8, 10, 18, 27, 30+(16)	73
2005hj	Ia-norm	-6, -5, 0, 2, 4	74
2005hk	Ia-pec	-9–8(2), -7(2), -6(3), -5(2), -4(3), -3(2), -2, -1, 4, 12, 14(2), 20, 23(2), 26, 27, 30+(6)	75, CfA
2006aj	Ic-broad	-5, -3, -2, -1, 0, 2, 3, 30+(1)	76
2006bp	IIP	-6, -5, -2, 0, 2–4, 7, 8, 13–16, 17(2), 20, 25, 30+(4)	72, 77
2006gz	Ia-pec	-[14–12], -10, -9, 6–10	78

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Column headings: (1) IAÜ designation. (2) Supernova subtype, as defined in Table 3. (3) Rest-frame SN age, rounded to closest whole day, in days from *B*-band maximum (for SN Ia), or from *V*-band maximum (for SN II/Ib/c). Adjacent ages are listed in between square brackets; a “(n)” indicates that *n* spectra correspond to a same rounded age. Spectra whose age exceeds +30 days are grouped together, e.g. 30+(5) indicated there are 5 spectra with ages $\geq +30$ days (past maximum). For spectra with unknown date of maximum, we instead report the number of spectra in the database as $N = n$. (4) Reference of refereed articles presenting optical spectroscopic data (see “References” below); “CfA” refers to unpublished spectra obtained by members of the CfA SN Group, some of which are available via the CfA Supernova Archive (<http://www.cfa.harvard.edu/oir/Research/supernova/SNarchive.html>).

^a For SN 1987A we give the age in days from neutrino outburst, $JD = 2446849.82$ (Hirata et al. 1987). Spectra with ages In the actual SNID template, however, we use the age from *V*-band maximum, which we estimate from data presented by (Hamuy et al. 1988) to be $JD = 2446934.18$.

^b The light curve of SN 1992H exhibited a truncated plateau (Clocchiatti et al. 1996a), but its spectra are otherwise indistinguishable from other type-IIP supernovae.

^c Although SN 2002ic is similar in many respects to a 1991T-like SN Ia (Hamuy et al. 2003), the presence of strong hydrogen emission (resulting from interaction of the SN ejecta with a dense CSM) is unusual in type Ia supernovae. For the purposes of this paper We therefore classify this event as a “Ia-csm” SN Ia, although a type Ic classification has been suggested for this supernova (Benetti et al. 2006).

^d SN 2003fg is also known as SNLS-03D3bb. It is a peculiar, overluminous SN Ia at $z = 0.244$ discovered by the Supernova Legacy Survey (Howell et al. 2006).

^e The date of maximum is not known for SN 2004dj, but the date of explosion is estimated to be $JD = 2453187 \pm 20$ days.

^f The *V*-band light curve of SN 2005bf had two distinct maxima. The age is expressed in days from the second, brighter, maximum.

TABLE 2
 SNID SUPERNOVA DATA

IAU Name	Template Name	Subtype	JD_{\max}^a	cz^b	$\Delta m_{15}(B)$
1979C	sn79C	IIL	43979	1571	...
1980K	sn80K	IIL	44542	48	...
1981B	sn81B	Ia-norm	44670.95	1808	1.10
1983N	sn83N	Ib-norm	45531	513	...
1983V	sn83V	Ic-norm	45673	1636	...
1984L	sn84L	Ib-norm	45935	1532	...
1986G	sn86G	Ia-91bg	46561.36	547	1.73
1987A	sn87A	II-pec	46934.18	278	...
1988L	sn88L	Ib-norm	...	1895	...
1989B	sn89B	Ia-norm	47564.32	703	1.31
1990B	sn90B	Ic-norm	47911	2255	...
1990I	sn90I	Ib-norm	48010	2880	...
1990K	sn90K	IIL	...	1523	...
1990N	sn90N	Ia-norm	48081.90	978	1.07
1990O	sn90O	Ia-norm	48076.13	9193	0.96
1990U	sn90U	Ic-norm	48092	2362	...
1990aa	sn90aa	Ic-norm	...	4938	...
1991A	sn91A	Ic-norm	...	3174	...
1991M	sn91M	Ia-norm	48334.98	2180	...
1991N	sn91N	Ic-norm	...	983	...
1991T	sn91T	Ia-91T	48374.03	1736	0.94
1991ar	sn91ar	Ib-norm	...	4561	...
1991bg	sn91bg	Ia-91bg	48603.12	1060	1.93
1992A	sn92A	Ia-norm	48640.63	1877	1.47
1992H	sn92H	IIP	48665.9	1793	...
1992ar	sn92ar	Ic-norm	48832.93	43470	...
1993J	sn93J	IIb	49095.0	-34	...
1993ac	sn93ac	Ia-norm	49269.70	14800	1.19
1994D	sn94D	Ia-norm	49432.47	592	1.32
1994I	sn94I	Ic-norm	49451.60	600	...
1994M	sn94M	Ia-norm	49473.61	6943	1.44
1994Q	sn94Q	Ia-norm	49496.72	8672	...
1994S	sn94S	Ia-norm	49518.28	4525	1.10
1994T	sn94T	Ia-norm	49514.54	10396	1.39
1994ae	sn94ae	Ia-norm	49684.65	1301	0.86
1995D	sn95D	Ia-norm	49768.60	1966	0.99
1995E	sn95E	Ia-norm	49774.67	3470	1.06
1995F	sn95F	Ic-norm	...	1518	...
1995ac	sn95ac	Ia-norm	49992.99	14990	...
1995al	sn95al	Ia-norm	50028.96	1514	0.83
1995bd	sn95bd	Ia-norm	50086.31	4377	0.84
1996C	sn96C	Ia-norm	50128.42	8094	0.97
1996L	sn96L	IIIn	50155	9900	...
1996X	sn96X	Ia-norm	50190.85	2032	1.25
1996cb	sn96cb	IIb	50453	747	...
1997br	sn97br	Ia-91T	50559.26	2085	1.00
1997cn	sn97cn	Ia-91bg	50586.64	4855	1.86
1997cy	sn97cy	IIIn	...	19247	...
1997dc	sn97dc	Ib-norm	...	3499	...
1997dd	sn97dd	IIb	...	4568	...
1997dq	sn97dq	Ic-norm	...	988	...
1997ef	sn97ef	Ic-broad	50793	3504	...
1997ei	sn97ei	Ic-norm	...	3183	...
1998S	sn98S	IIIn	50891	895	...
1998T	sn98T	Ib-norm	...	3121	...
1998aq	sn98aq	Ia-norm	50930.80	1184	1.15
1998bu	sn98bu	Ia-norm	50952.40	855	1.01
1998bw	sn98bw	Ic-broad	50929	2548	...
1998dt	sn98dt	Ib-norm	51069	4480	...
1999aa	sn99aa	Ia-91T	51231.97	4330	0.85
1999ac	sn99ac	Ia-91T	51250.60	2848	1.00
1999aw	sn99aw	Ia-91T	51254.7	11992	0.81
1999by	sn99by	Ia-91bg	51309.50	657	1.90
1999di	sn99di	Ib-norm	...	4904	...
1999dn	sn99dn	Ib-norm	...	2803	...
1999ee	sn99ee	Ia-norm	51469.29	3422	0.94
1999em	sn99em	IIP	51485.5	717	...
1999ex	sn99ex	Ib-norm	51501.2	3422	...
1999gi	sn99gi	IIP	51530.0	592	...
2000E	sn00E	Ia-norm	51576.80	1415	1.14
2000H	sn00H	IIb	51577	3945	...
2000cx	sn00cx	Ia-pec	51752.40	2379	0.93
2001el	sn01el	Ia-norm	52182.5	1168	1.13
2002ap	sn02ap	Ic-broad	52314	657	...
2002bo	sn02bo	Ia-norm	52356.89	1293	1.13

TABLE 2 — *Continued*

IAU Name	Template Name	Subtype	JD_{\max}^{a}	cz^{b}	$\Delta m_{15}(B)$
2002cx	sn02cx	Ia-pec	52417.16	7184	1.29
2002er	sn02er	Ia-norm	52524.84	2568	1.33
2002ic	sn02ic	Ia-csm	52602	19966	...
2003cg	sn03cg	Ia-norm	52729.40	1238	1.12
2003du	sn03du	Ia-norm	52765.62	1912	1.04
2003fg	sn03fg	Ia-pec	52763.8	73149	0.80
2004S	sn04S	Ia-norm	53039.87	2731	1.14
2004aw	sn04aw	Ic-norm	53091.1	4771	0.62
2004dj	sn04dj	IIP	...	132	...
2004eo	sn04eo	Ia-norm	53279.2	4707	1.46
2004et	sn04et	IIP	53286.58	48	...
2005bf	sn05bf	Ib-pec	53498.39	5670	...
2005cs	sn05cs	IIP	53553.62	463	...
2005gj	sn05gj	Ia-csm	53657.80	18467	0.09
2005hj	sn05hj	Ia-norm	53676.1	17208	...
2005hk	sn05hk	Ia-pec	53685.1	3895	1.56
2006aj	sn06aj	Ic-broad	53795.22	10046	1.29
2006bp	sn06bp	IIP	53842.49	1052	...
2006gz	sn06gz	Ia-pec	54021.2	7111	0.77

^a Julian date of maximum light, determined using the MLCS2k2 code (Jha et al. 2007) or from the literature; actually $JD_{\max} - 2400000$.

^b Redshift of the host galaxy (in km s^{-1}), usually as reported in the NASA/IPAC Extragalactic Database (NED), <http://nedwww.ipac.caltech.edu/>.

TABLE 3
SUPERNOVA TYPES AND SUBTYPES

Type	Ia	Ib	Ic	II
“normal”	Ia-norm	Ib-norm	Ic-norm	II-norm (IIP)
“other”	Ia-pec Ia-91T Ia-91bg	Ib-pec IIb	Ic-pec Ic-broad	II-pec III IIIn IIb

NOTE. — “norm” and “pec” refer to “normal” and “peculiar” subtypes of the corresponding type; see Table 1 for specific examples. “Ic-broad” is used to identify broad-lined SNe Ic (“hypernovae”), some of which are associated with Gamma-Ray Bursts. The transitional type IIb supernovae are included in both type Ib and type II categories.

TABLE 4
SNID NON-SUPERNOVA DATABASE

Template Name	Subtype	Notes	Reference
agn	AGN	SDSS composite quasar spectrum	Vanden Berk et al. 2001
kcE	Gal	Elliptical galaxy	Kinney et al. 1996
kcS0	Gal	S0 galaxy	Kinney et al. 1996
kcSBn	Gal	Starburst galaxy. n runs from 1 to 6 depending on the $E(B - V)$ range	Kinney et al. 1996
kcSa	Gal	Sa galaxy	Kinney et al. 1996
kcSb	Gal	Sb galaxy	Kinney et al. 1996
kcSc	Gal	Sc galaxy	Kinney et al. 1996
lbv99bw	LBV	SN “impostor” 1999bw	CfA
lbv01ac	LBV	SN “impostor” 2001ac	CfA
lbv03hy	LBV	SN “impostor” 2003hy	CfA
mstar	M-star	M-star. The “age” refers to the MK spectral type (0 to 10)	Fluks et al. 1994