

Plans for SDSS-II SN Data Release

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Outline

- ▶ Final 3-Year Data Release in March 2010
 - ▶ SDSS-II Light curves
 - ▶ non-SDSS-II follow-up data (NMSU, SPICam, MDM, etc)?
 - ▶ Spectroscopic data (non-SDSS-II)
 - ▶ Classifications - photo and spec samples, z
 - ▶ Ancillary data
- ▶ Format of the data to be released
- ▶ Repository/Server

SDSS-II SMP

THE SLOAN DIGITAL SKY SURVEY-II: PHOTOMETRY AND SUPERNOVA IA LIGHT CURVES FROM THE 2005 DATA

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- ▶ All 10486 multi-epoch ($n_{epoch} > 1$) candidates have SMP v.05b.
- ▶ Method, quality, data format well-documented.
- ▶ Ignore single-epoch candidates (asteroids).
- ▶ Done.

Table 2
Photometry for SN 2005hk (SDSS SN 8151)

FLAG ^a	MJD	FILT ^b	MAG ^c	MERR ^d	MSERR ^e	MGERR ^f	FLUX ^g	FLUXERR ^h	SERR ⁱ	GERR ^j	NPRE ^k	TELE	RUN ^l	STRIP ^m
0	53671.34315	1	18.745	0.012	0.001	0.001	1.128E+02	1.247E+00	1.479E-01	9.707E-02	10	sdss	5786	82S
0	53671.33983	2	18.960	0.018	0.005	0.001	9.419E+01	1.562E+00	4.341E-01	1.051E-01	12	sdss	5786	82S
0	53671.34066	3	19.288	0.023	0.003	0.002	6.880E+01	1.458E+00	2.055E-01	1.349E-01	12	sdss	5786	82S
0	53671.34232	4	19.609	0.096	0.066	0.012	5.115E+01	4.547E+00	3.125E+00	5.661E-01	12	sdss	5786	82S
0	53671.34149	0	18.612	0.035	0.003	0.003	1.349E+02	4.349E+00	3.877E-01	3.688E-01	10	sdss	5786	82S
0	53674.24276	1	16.989	0.012	0.000	0.000	5.686E+02	6.285E+00	1.035E-01	9.707E-02	10	sdss	5797	82S
0	53674.23944	2	17.103	0.006	0.000	0.000	5.210E+02	2.879E+00	1.724E-01	1.051E-01	12	sdss	5797	82S
0	53674.24027	3	17.352	0.009	0.001	0.000	4.093E+02	3.393E+00	4.193E-01	1.349E-01	12	sdss	5797	82S
0	53674.24193	4	17.576	0.017	0.004	0.002	3.336E+02	5.224E+00	1.132E+00	5.661E-01	12	sdss	5797	82S
0	53674.24110	0	17.044	0.023	0.001	0.001	5.718E+02	1.211E+01	2.840E-01	3.688E-01	10	sdss	5797	82S
0	53676.33207	1	16.523	0.004	0.000	0.000	8.734E+02	3.218E+00	7.615E-02	9.707E-02	10	sdss	5807	82S
0	53676.32875	2	16.598	0.004	0.000	0.000	8.295E+02	3.056E+00	7.532E-02	1.051E-01	12	sdss	5807	82S
0	53676.32958	3	16.811	0.005	0.001	0.000	6.736E+02	3.102E+00	3.147E-01	1.349E-01	12	sdss	5807	82S
0	53676.33124	4	17.016	0.010	0.003	0.001	5.587E+02	5.146E+00	1.419E+00	5.661E-01	12	sdss	5807	82S
0	53676.33041	0	16.675	0.014	0.001	0.000	8.032E+02	1.036E+01	3.986E-01	3.688E-01	10	sdss	5807	82S
...														

Notes. The online files include some additional ancillary information about each object, including the IAU designation, the coordinates, the redshift, the expected foreground extinctions from Schlegel et al. (1998), and the derived underlying galaxy brightnesses from the scene modeling.

^a For details of (bitwise) values, see Section 4.1.1. A value of 0 indicates no lines, greater than 1024 is very likely a bad measurement, while a value between 0 and 1024 is likely okay but frame not used for the galaxy solution.

^b 01234 = *ugriz* bands.

^c MAG is in the native SDSS photometric system, and is an asinh magnitude. No extinction correction has been applied.

^d Random error in magnitude.

^e Systematic magnitude error estimate from error in sky estimate.

^f Systematic magnitude error estimate from error in underlying galaxy brightness.

^g FLUX is in microJy using SDSS/AB correction (see text).

^h Random error in flux.

ⁱ Systematic flux error estimate from error in sky estimate.

^j Systematic flux error estimate from error in underlying galaxy brightness.

^k RUN gives the SDSS run identifier.

^l Strip gives the SDSS strip for this measurement.

^m NPRE gives the number of pre-SN observations used.

Non-SDSS-II Imaging Data?

- ▶ 631+ additional epochs of 314 unique candidates.
- ▶ 163 MDM Imaging
- ▶ 118 NMSU 1m
- ▶ 181 SPICam
- ▶ 55 UH88
- ▶ (55 CSP-IR)
- ▶ Separate paper?

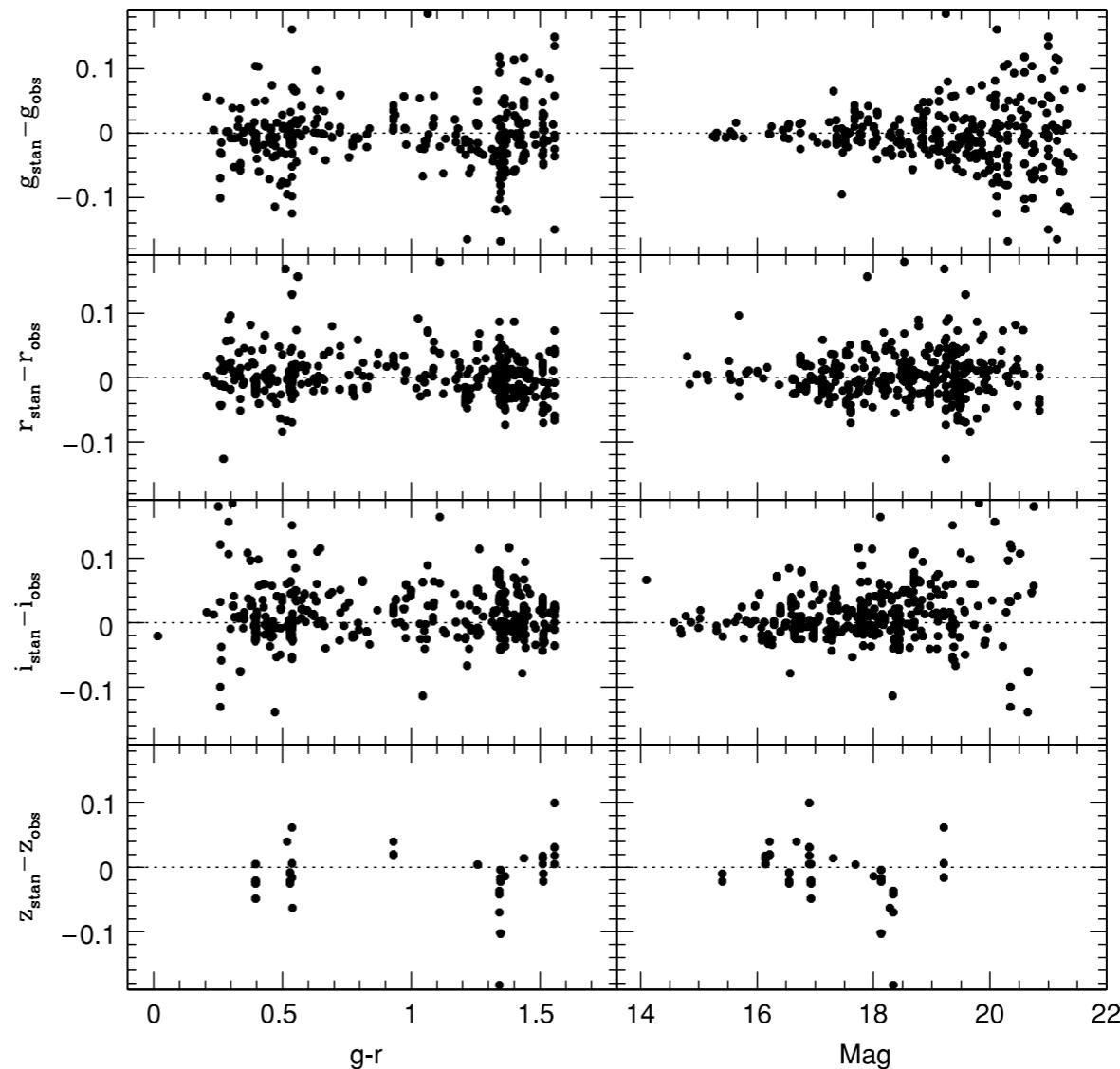


Figure 4. Difference between recovered and calibration photometry for calibration stars in the MDM frames, using the color terms presented in the text.

Spectroscopic Data

- ▶ Original 1-D FITS files from observers (most w/ error bars).
- ▶ **1050** raw ASCII spectra w/ errors. FITS?
 - ▶ http://sdssdp47.fnal.gov/sdssn_data/Technotes/Sako/raw_spectra_091201.tar.gz
- ▶ **747** host-subtracted spectra w/ errors (type>110).
 - ▶ Derived parameters:
 - ▶ redshifts, errors, SN type (in database)
 - ▶ SNID type & phase (not host-subtracted), SN phase, r-value, S/N (from Chen; not in database)
- ▶ **213** host-only spectra.

Spectral Information

Östman, Nordin et al.: NTT and NOT spectroscopy of SDSS-II supernovae

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Table A.1. Information about the observations.

ID	SpID	IAU ^a	Telescope	Slit Width (arcsec)	Exposure Time (s)	Airmass	Seeing (arcsec) ^b
12778	692	2006fs	NTT	1.0	1000	1.16	1.1
12779	693	2006fd	NTT	1.5	1000	1.27	1.2
12781	680	2006er	NTT	1.5	1800	1.14	1.9
12782	681	2006fq	NTT	1.5	1000	1.27	1.6
12820	711	2006fg	NTT	1.5	600	1.41	1.8
12842	682	2006ez	NTT	1.5	800	1.14	1.5
12843	727	2006fa	NTT	1.0	1000	1.15	0.8
12844	684	2006fe	NTT	1.0	2000	1.21	1.6
12853	685	2006ey	NTT	1.5	1000	1.17	1.1
12855	716	2006fk	NTT	1.5	2000	1.25	2.0
12856	695	2006fl	NTT	1.5	2197	1.38	1.5
12860	688	2006fc	NTT	1.5	1000	1.16	1.6
12874	689	2006fb	NTT	1.5	2400	1.20	2.5
12898	712	2006fw	NTT	1.5	600	1.35	1.5
12907	714	2006fv	NTT	1.5	600	1.21	1.6
12927	690	2006fj	NTT	1.5	1800	1.25	2.5
12928	686	2006ew	NTT	1.0	2000	1.20	1.2
12930	687	2006ex	NTT	1.5	1000	1.16	1.4

Table A.2. Spectroscopic typing and redshift determination.

ID	SpID	SDSS Type ^a	NTT/NOT Type ^b	LC Epoch ^c	SNID Epoch ^d	SDSS z ^e	SNID z	Notes ^f
12778	692	–	–	–	–	0.0992 ± 0.0001	–	
12779	693	Ia	Ia-norm	23.0 ± 0.8 ^p	26 ± 16	0.0800 ± 0.0001	0.078 ± 0.003	s
12781	680	Ia	Ia-norm	10.9 ± 0.2	20 ± 18	0.0843 ± 0.0002	0.084 ± 0.004	
12782	681	II	II	–	–	0.06787 ± 0.00005	–	v
12820	711	II	IIP	–	18 ± 66	0.04458 ± 0.00005	0.046 ± 0.005	
12842	682	II	II	–	–	0.0887 ± 0.0005	–	v, zg
12843	727	Ia	Ia-norm	10.2 ± 0.1	16 ± 25	0.1670 ± 0.0001	0.161 ± 0.006	s
12844	684	Ic	–	–	–	0.07053 ± 0.00009	–	
12853	685	Ia	Ia-norm	10.3 ± 0.2	11 ± 52	0.1694 ± 0.0005	0.171 ± 0.006	zg
12855	716	Ia	Ia-norm	-2.6 ± 0.2	0 ± 5	0.172 ± 0.005	0.171 ± 0.005	s, zs
12856	695	Ia	Ia-norm	-3.2 ± 0.2	-1 ± 4	0.1717 ± 0.0001	0.171 ± 0.005	s
12860	688	Ia	Ia-norm	-1.9 ± 0.9	-1 ± 5	0.1217 ± 0.0005	0.124 ± 0.005	s, zg
12874	689	–	–	–	–	0.2449 ± 0.0002	–	
12898	712	Ia	Ia-norm	-6.6 ± 0.1	-1 ± 5	0.0835 ± 0.0005	0.078 ± 0.004	s, zg
12907	714	Ia	Ia-norm	-0.1 ± 0.2	0 ± 5	0.1318 ± 0.0002	0.124 ± 0.005	s
12927	690	Ia	Ia-norm	2.6 ± 0.8 ^p	-1 ± 4	0.175 ± 0.005	0.172 ± 0.005	s, zs
12928	686	Ia	Ia-norm	17 ± 1 ^p	20 ± 24	0.1397 ± 0.0005	0.141 ± 0.004	s, zg
12930	687	Ia	Ia-norm	10.1 ± 0.2	12 ± 12	0.1475 ± 0.0002	0.140 ± 0.005	

- ▶ Linda's paper as the standard.
- ▶ Include Zheng et al. (2010 in prep) on 2006/7 data.
 - ▶ need to publish host-subtraction paper!
- ▶ Other details:
 - ▶ SN+host & host-subtracted spectra.
 - ▶ What about host-only spectra?

Candidate Classification

- ▶ Spectroscopic types, z_{best} and error.
- ▶ Cross-matched with Schneider et al. (2010) spectroscopic QSO catalog and Richards et al. (2009) photometric QSO catalog.
- ▶ Redshifts from other spectroscopic surveys in Stripe 82.
 - ▶ Wigglez, DEEP2, etc. Or in ancillary catalog?
- ▶ Host galaxy ID - single-frame & coadd objID.
 - ▶ One per candidate?
- ▶ Photometric types, probabilities, photo-z (for photo-la candidates), other parameters.

Ancillary Data

- ▶ Light curve fit results.
- ▶ MLCS, SALT-II. Who will do this?
- ▶ Host galaxy modeling.
 - ▶ Mat (PEGASE), Ravi (FSPS) - list of parameters.
 - ▶ Also, photometry data used in fits.
- ▶ Other value-added catalog.
 - ▶ Photometry of faint hosts.
 - ▶ Matt's Bazin fits?
 - ▶ Others?

Data Format/Repository

- ▶ ApJS electronic tables.
- ▶ What about light curves and spectra? Is there a permanent SDSS server?
- ▶ mysql database or not.