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CCD OBSERVATIONS OF A NOVA AND TWO SUPERNOVAE  
IN EXTERNAL GALAXIES

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VAR 1:

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<b>Name of the object:</b>	
Nova in M31	
<b>Equatorial coordinates:</b>	<b>Equinox:</b>
R.A.= 00 <sup>h</sup> 42 <sup>m</sup> 18 <sup>s</sup> .47 DEC.= 41°12'38".9	J2000.0
<b>Comparison star(s):</b>	Selected field stars
<b>Type of variability:</b>	Nova

VAR 2:

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<b>Name of the object:</b>	
2001ds in NGC 1654	
<b>Equatorial coordinates:</b>	<b>Equinox:</b>
R.A.= 02 <sup>h</sup> 10 <sup>m</sup> 08 <sup>s</sup> .73 DEC.= 36°42'20".3	J2000.0
<b>Comparison star(s):</b>	GSC 2321 971
<b>Type of variability:</b>	Supernova

VAR 3:

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<b>Name of the object:</b>	
2002bo in NGC 3190	
<b>Equatorial coordinates:</b>	<b>Equinox:</b>
R.A.= 10 <sup>h</sup> 18 <sup>m</sup> 6 <sup>s</sup> .51 DEC.= 21°49'41".7	J2000.0
<b>Comparison star(s):</b>	PG 1047+003, PG 1047+003A, PG 1047+003B
<b>Type of variability:</b>	Supernova

<b>Observatory and telescope:</b>	
TUBITAK National Observatory (TUG), 1.5 m Russian - Turkish Joint Telescope (RTT150)	
<b>Detector:</b>	ST-8E
<b>Filter(s):</b>	$B, V, R_C$
<b>Transformed to a standard system:</b>	yes
<b>Standard stars (field) used:</b>	Landolt (1992), Landolt & Henden (2001)
<b>Remarks:</b>	
The nova in M31 was discovered by Martin and Li (2001), the supernova 2001ds in UGC 1564 by Boles (2001), and the supernova 2002bo in NGC 3190 by Cacella and Hirose (2002). Background in each galaxy was subtracted by optimal image subtraction technique. Differential magnitudes with respect to comparison stars selected in each field were transformed to the standard magnitudes using colour coefficients determined from Landolt standards (Landolt 1992, Henden and Landolt 2001). We note, in the case of the nova in M31, that no nova is reported in its position by Shafter and Irby (2001) in their two nova surveys in M31.	

Table 1: Nova in M31

HJD (2450000+)	$B$	$V$	$R_C$	$\sigma B$	$\sigma V$	$\sigma R_C$
2142.5141	17.80	17.64	17.39	0.06	0.01	0.01
2143.4908	17.97	17.81	17.58	0.03	0.01	0.01
2145.5026			17.76			0.02
2146.5457	18.54	18.49	18.16	0.02	0.01	0.01
2148.5224	18.86	18.84	18.45	0.02	0.01	0.01
2150.5694	18.80	18.74	18.36	0.02	0.01	0.01
2151.5421	19.04	18.90	18.61	0.01	0.01	0.01
2157.4721	19.29	19.31	19.01	0.03	0.01	0.02
2163.5311		19.54	19.09		0.02	0.02
2165.4843	19.89	19.82	19.38	0.02	0.01	0.01
2166.5078	19.78	19.83	19.17	0.15	0.02	0.01
2184.4733	20.84	20.85	19.92	0.03	0.03	0.03
2189.4734		21.00	19.77		0.02	0.02

Table 2: Supernova 2001ds in UGC 1654

HJD (2450000+)	$V$	$R_C$	$\sigma V$	$\sigma R_C$
2142.59		18.47		0.02
2143.59	19.05	18.49	0.03	0.02
2146.57		18.61		0.03
2190.41	20.57	19.94	0.04	0.03

Table 3: SN 2002bo in NGC 3190

HJD (2450000+)	$V$	$B - V$	$V - R_C$
2349.457	14.39	0.23	0.40
2351.390	14.13	0.22	0.35
2353.439	13.92	0.22	0.32
2373.442	14.72	0.25	0.40
2413.276	16.03	0.60	0.43

## Reference:

Boles, T., 2001, *IAUC*, 7684

Cacella, P., & Hirose, Y., 2002, *IAUC*, 7847

Henden A. A. & Landolt A. U., 2001, *IBVS*, No. 5166

Landolt, A. U., 1992, *AJ*, **104**, 340

Martin, P., & Li, W. D., 2001, *IAUC*, 7684

Shafter, A. W., & Irby, B. K., 2001, *ApJ*, **563**, 749