New Red Variable Stars in ASAS-SN database. Part 2.

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Abstracts: 20 new red variable stars are presented, which were found in the ASAS-SN database:

2MASS J19262479+0829055, 2MASS J20421894+2812211, 2MASS J20392002+2250217, 2MASS J20340351+2609349, 2MASS J20300680+1958584, 2MASS J20282826+2840274, 2MASS J20280514+2452594, 2MASS J18054024+2542318, 2MASS J20253003+2058298, 2MASS J20543096+1031316, 2MASS 18500459+1935329, 2MASS J20290482+2853035, 2MASS J20285155+2438348, 2MASS J18394029+2032390, 2MASS J20254512+1955457, 2MASS J18253167+0254356, 2MASS J18265819+1220067, 2MASS J18333406+1945563, 2MASS J18333935+1310426, 2MASS J07095965+0017197.

I have continued my search for new variable stars in the ASAS-SN data (citation BAVJ20) The innovative method is based on identifying variable stars from the APASS data release (Henden et al. 2015) using the ADQL queries from the VizieR TAP service at http://tapvizier.u-strasbg.fr/adql/ and a subsequent detailed analysis of the corresponding ASAS-SN data (citation). Coordinates of the objects were gleaned from the UCAC4 (UCAC5) catalog. I used ADQL queries to the TAP VizieR system for search for new variable stars. An automatic selection of stars with B-V >1 was made in the APASS data and V err > 0.4. (V err - this is standard deviation (estimated sigma) from APASS data for "V" standart photometric scale). A program developed by Sergey Dubrovski was used for the period analysis, which is based on the method of Lafler-Kinman. All resulting phased light curves were inspected visually to optimize the period solution as it is difficult to determine the periods for semiregular variables. As an initial Epoch, usually the best observed brightness maximum was chosen. All objects were checked against the Strasbourg CDS Vizier service and the International Variable Star Index for pre-existence in variability catalogues. Maybe include some sentences from the description of ASAS-SN in wiki:

https://en.wikipedia.org/wiki/All_Sky_Automated_Survey_for_SuperNovae

or

http://www.wikiwand.com/en/All_Sky_Automated_Survey_for_SuperNovae

During this search 20 new red variable stars were found, which are presented below. The different colors of the dots correspond to different cameras of the ASAS-SN system. A triangle indicates, that the object is fainter than the detection limit.

Name	RA2000	DEC2000	Mag. Range V	Type	Epoch	Period	Light curve
2MASS J19262479+0829055	19 26 24.80	+08 29 05.43	14.35-15.0	L			Fig.1
2MASS J20421894+2812211	20 42 18.95	+28 12 21.15	14.75->16.4	M	2457907	223	Fig.2,2a
2MASS J20392002+2250217	20 39 20.03	+22 50 21.84	14.45-15.10	SR	2457298	180	Fig.3,3a
2MASS J20340351+2609349	20 34 03.51	+26 09 35.08	14.25-14.80	SR	2457210	56.2	Fig.4,4a
2MASS J20300680+1958584	20 30 06.80	+19 58 58.40	13.25-13.65	SR	2457202	49.2	Fig.5,5a
2MASS J20282826+2840274	20 28 28.27	+28 40 27.42	14.95-15.55	SR	2457264	77.9	Fig.6,6a
2MASS J20280514+2452594	20 28 05.14	+24 52 59.39	14.70-15.20	SR	2457910	68.7	Fig.7,7a
2MASS J18054024+2542318	18 05 40.25	+25 42 31.93	14.70-15.50	SR	2457413	102.5	Fig.8,8a
2MASS J20253003+2058298	20 25 30.04	+20 58 29.81	13.20-13.75	SR	2457611	170	Fig.9,9a
2MASS J20543096+1031316	20 54 30.96	+10 31 31.60	13.25-13.48	SR	2457642	34.8	Fig.10, 10a
2MASS 18500459+1935329	18 50 04.60	+19 35 32.95	16.05->16.95	L			Fig.11
2MASS J20290482+2853035	20 29 04.82	+28 53 03.71	14.45-14.95	SR	2457202	71.4	Fig.12, 12a
2MASS J20285155+2438348	20 28 51.54	+24 38 34.72	15.15-15.75	L			Fig.13
2MASS J18394029+2032390	18 39 40.29	+20 32 39.16	14.55-15.50	SR	2457852	77	Fig.14, 14a
2MASS J20254512+1955457	20 25 45.12	+19 55 45.79	14.10-15.50	SR	2457287	104	Fig.15, 15a
2MASS J18253167+0254356	18 25 31.68	+02 54 35.58	12.95-13.45	SR	2457969	65.4	Fig.16, 16a
2MASS J18265819+1220067	18 26 58.20	+12 20 06.72	14.40-14.85	SR	2457234	66.5	Fig.17, 17a
2MASS J18333406+1945563	18 33 34.07	+19 45 56.50	15.40-16.80	SR	2457209	137	Fig.18, 18a
2MASS J18333935+1310426	18 33 39.34	+13 10 42.44	15.50-16.30	SR	2457556	222	Fig.19, 19a
2MASS J07095965+0017197	07 09 59.65	+00 17 19.78	13.90-14.50	SR	2457291	200.8	Fig.20, 20a
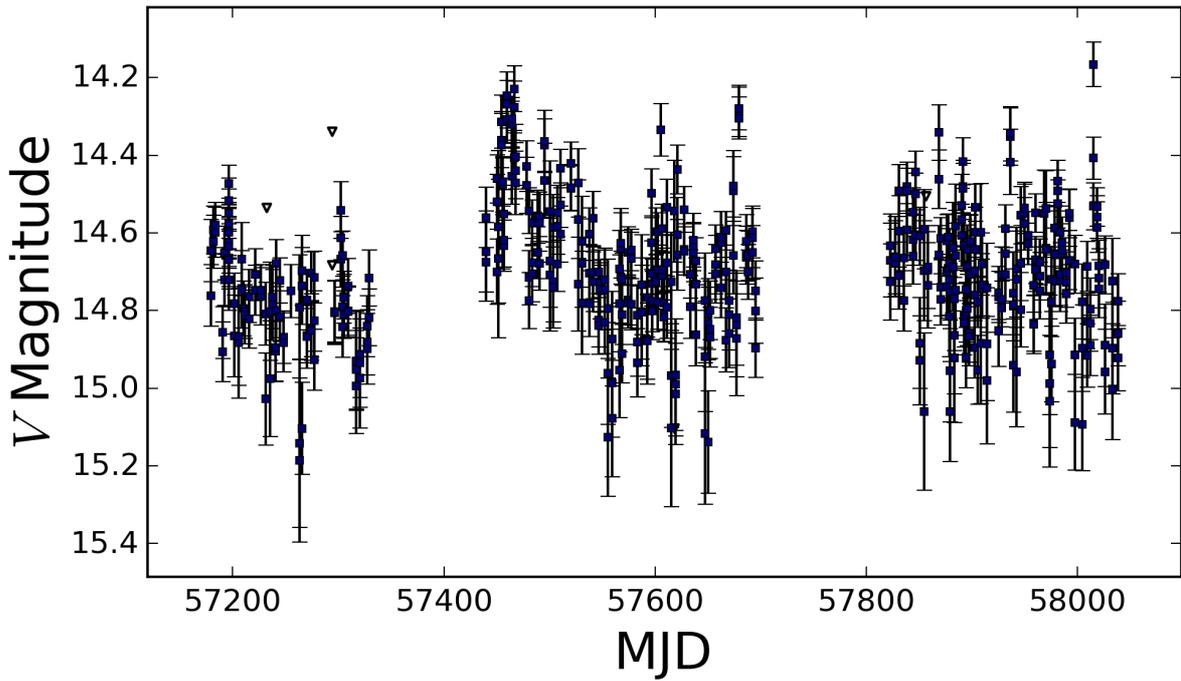
Fig.1 Photometric curve for 2MASS J19262479+0829055
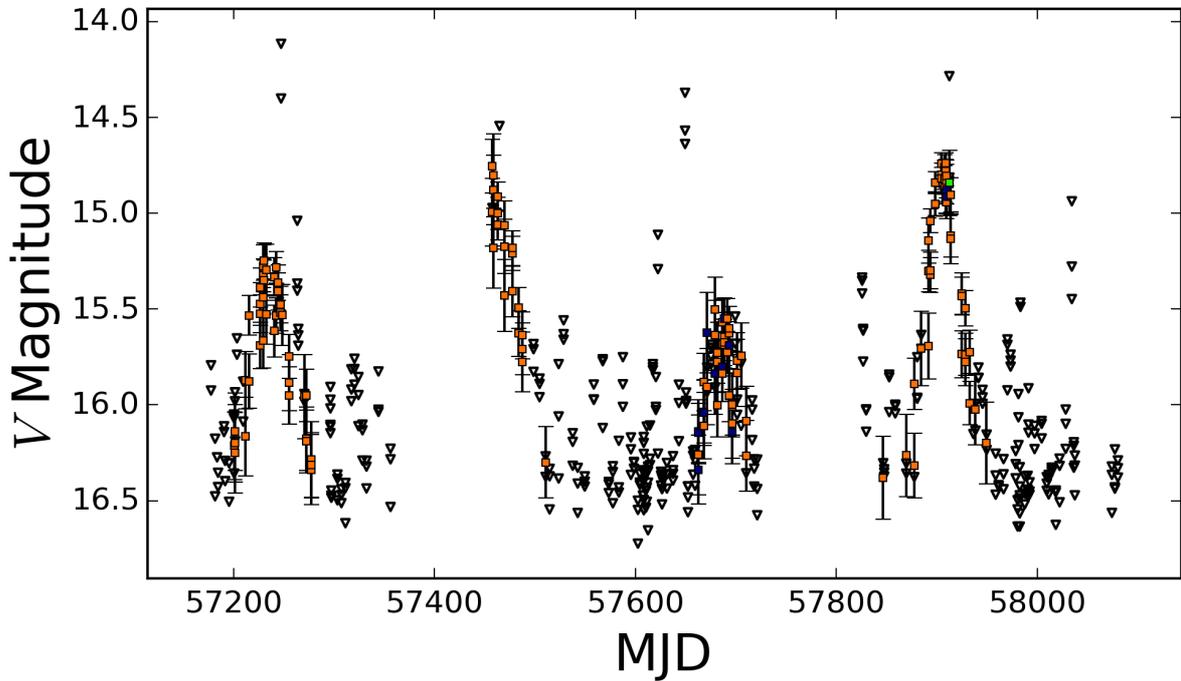

Fig.2 Photometric curve for 2MASS J20421894+2812211

2MASS J20421894+2812211

C= 2457907 + 223 *E
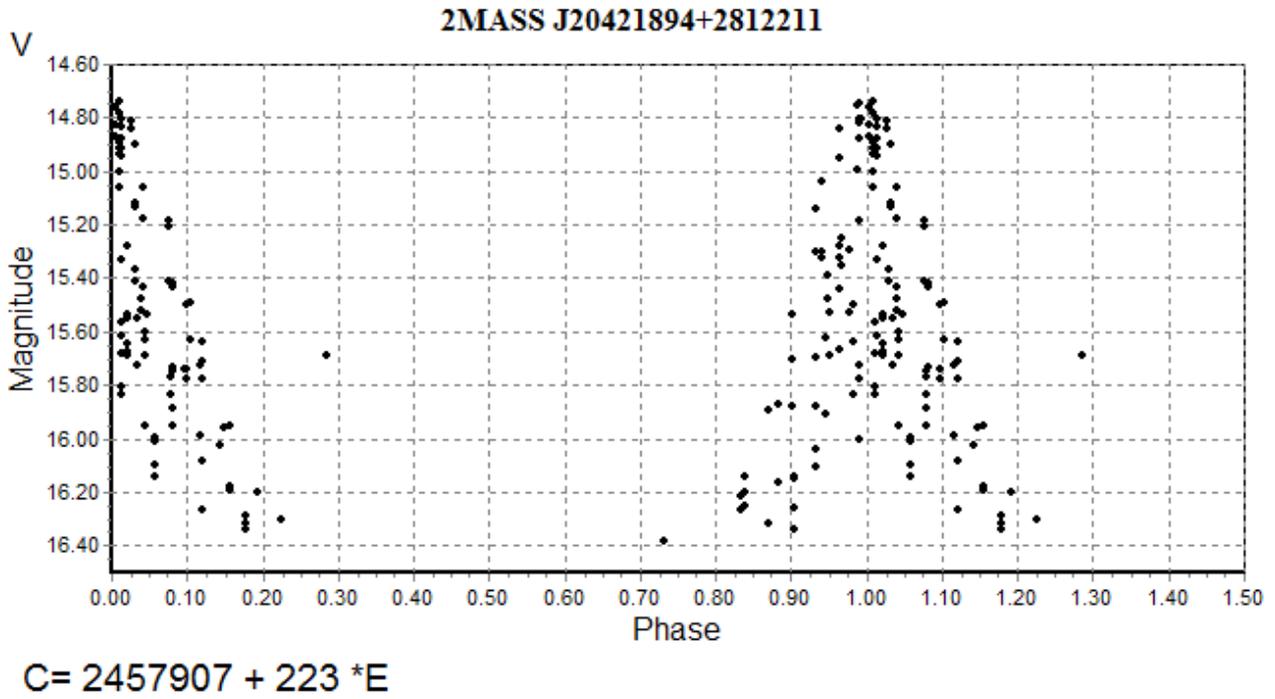
Fig.2a Phase Plot for 2MASS J20421894+2812211


R.A. = 20:39:20.03   Dec = 22:50:21.8
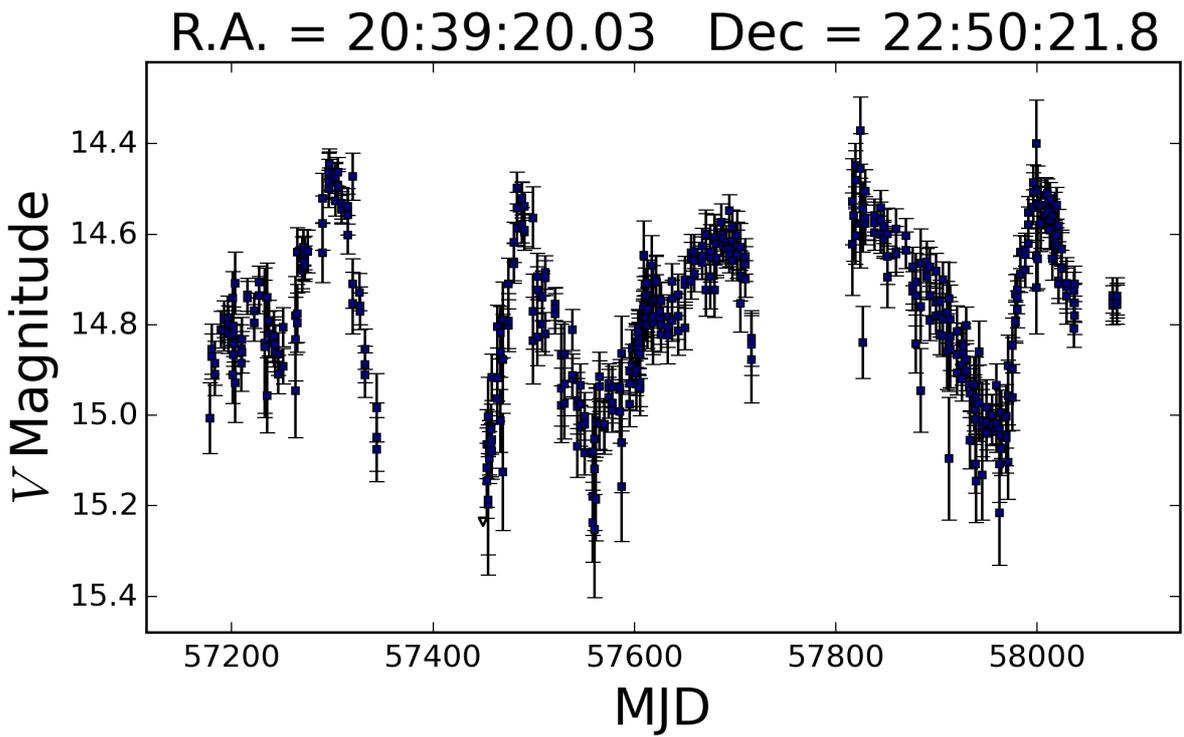
Fig.3 Photometric curve for 2MASS J20392002+2250217

2MASS J20392002+2250217

C= 2457298 + 180 *E
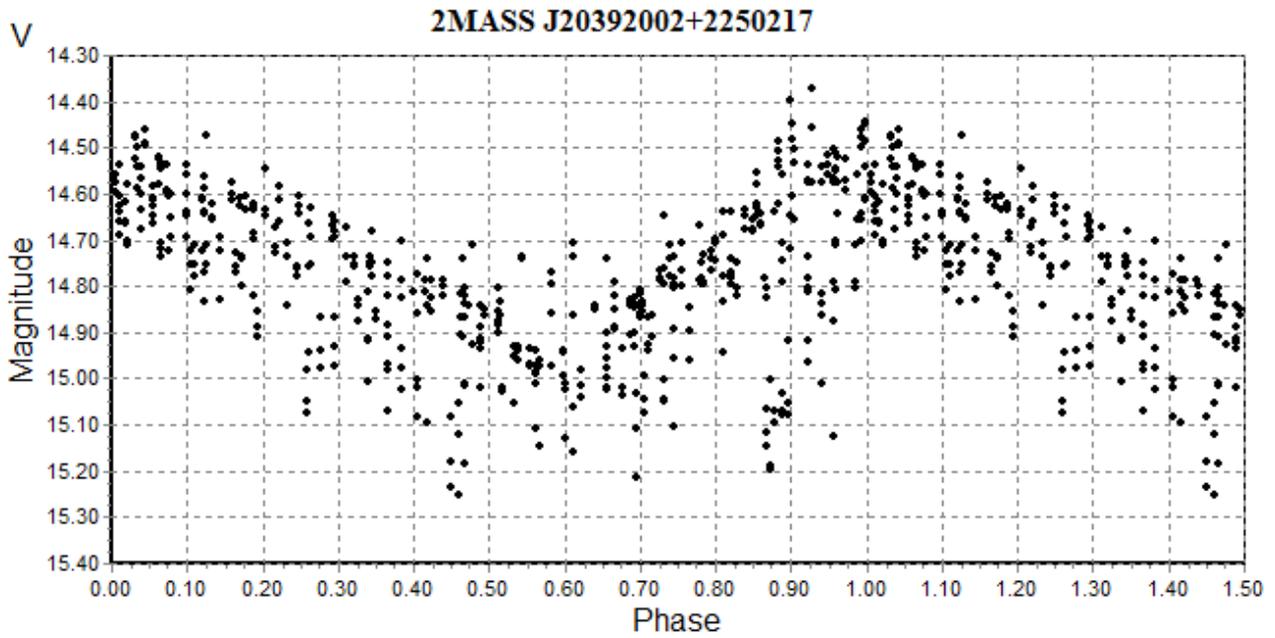
Fig.3a Phase Plot for 2MASS J20392002+2250217

R.A. = 20:34:03.51   Dec = 26:09:35.1
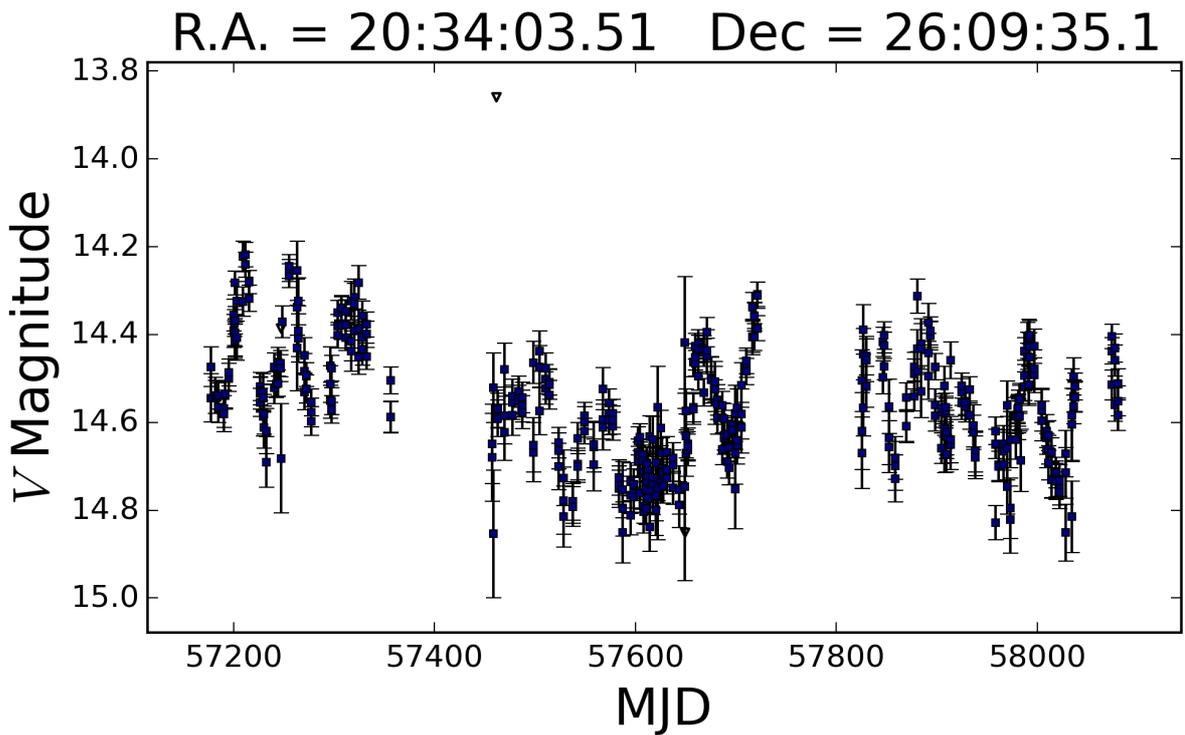
Fig.4 Photometric curve for 2MASS J20340351+2609349

2MASS J20340351+2609349
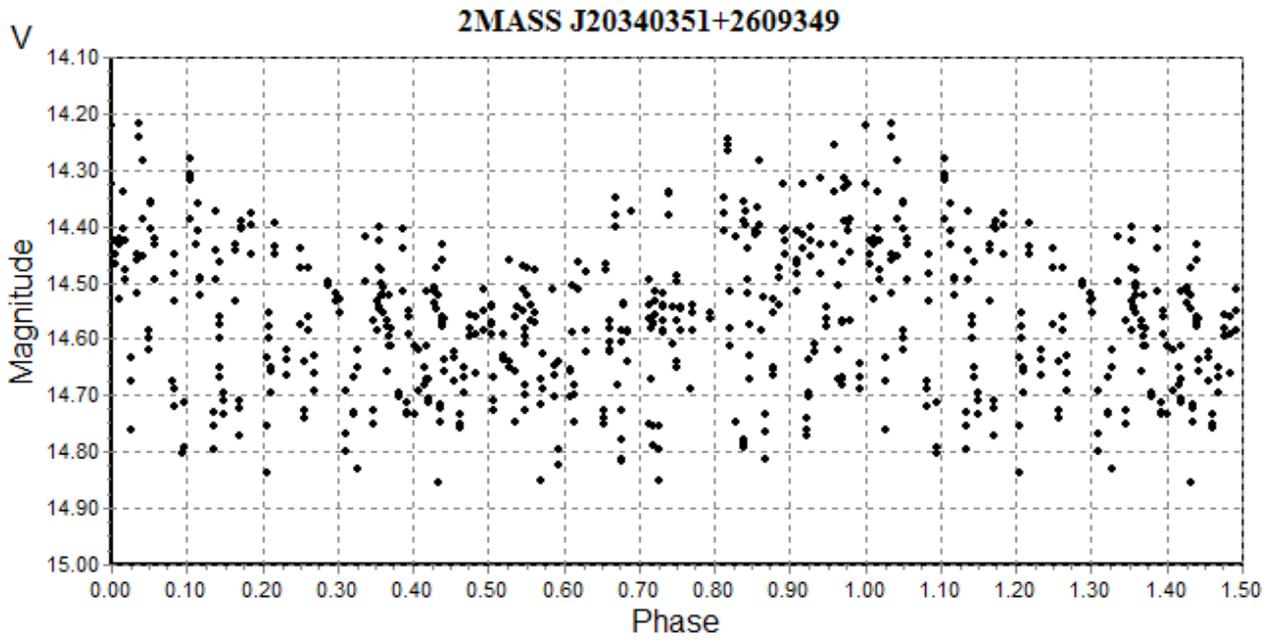
C= 2457210 + 56.2 *E

Fig.4a Phase Plot for 2MASS J20340351+2609349

R.A. = 20:30:06.80   Dec = 19:58:58.4
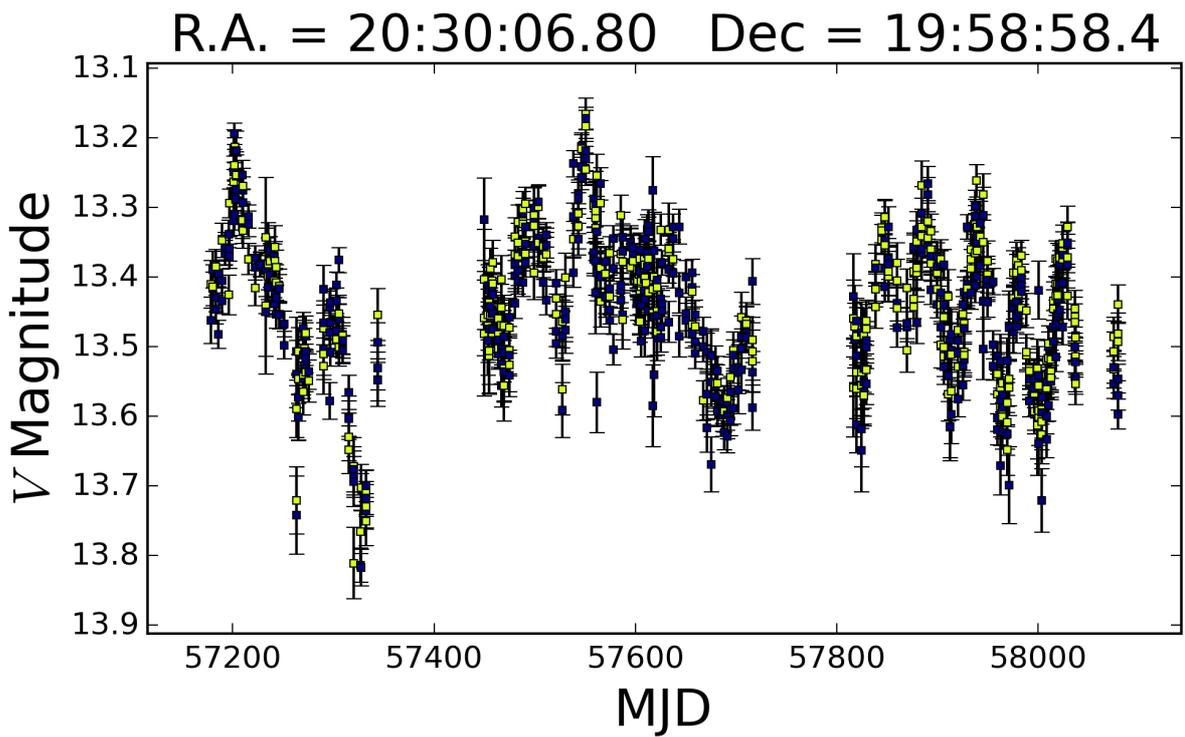
Fig.5 Photometric curve for 2MASS J20300680+1958584

2MASS J20300680+1958584
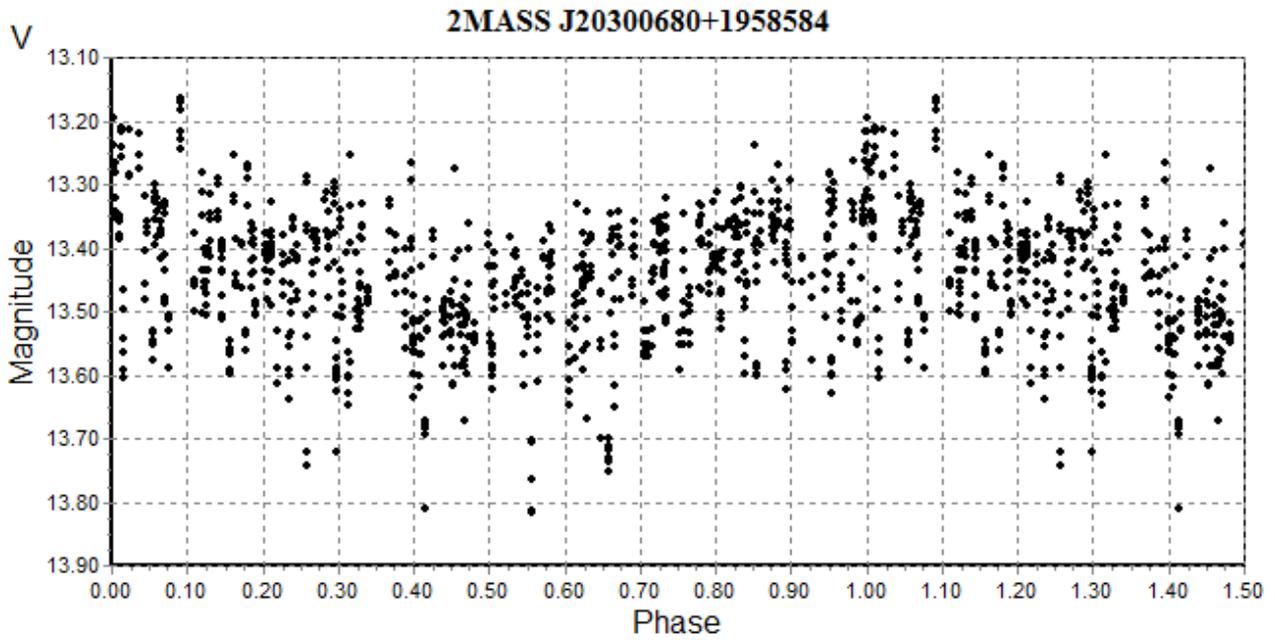
C= 2457202 + 49.2 *E

Fig.5a Phase Plot for 2MASS J20300680+1958584

R.A. = 20:28:28.27   Dec = 28:40:27.4
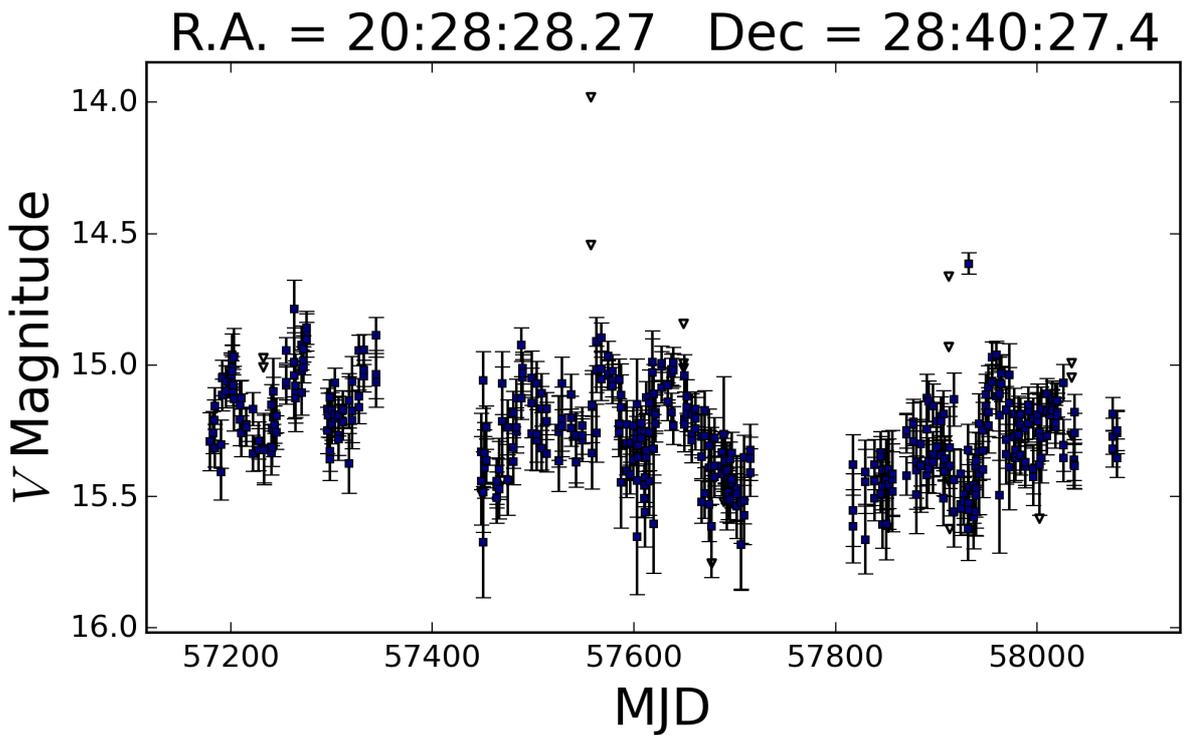
Fig.6 Photometric curve for 2MASS J20282826+2840274
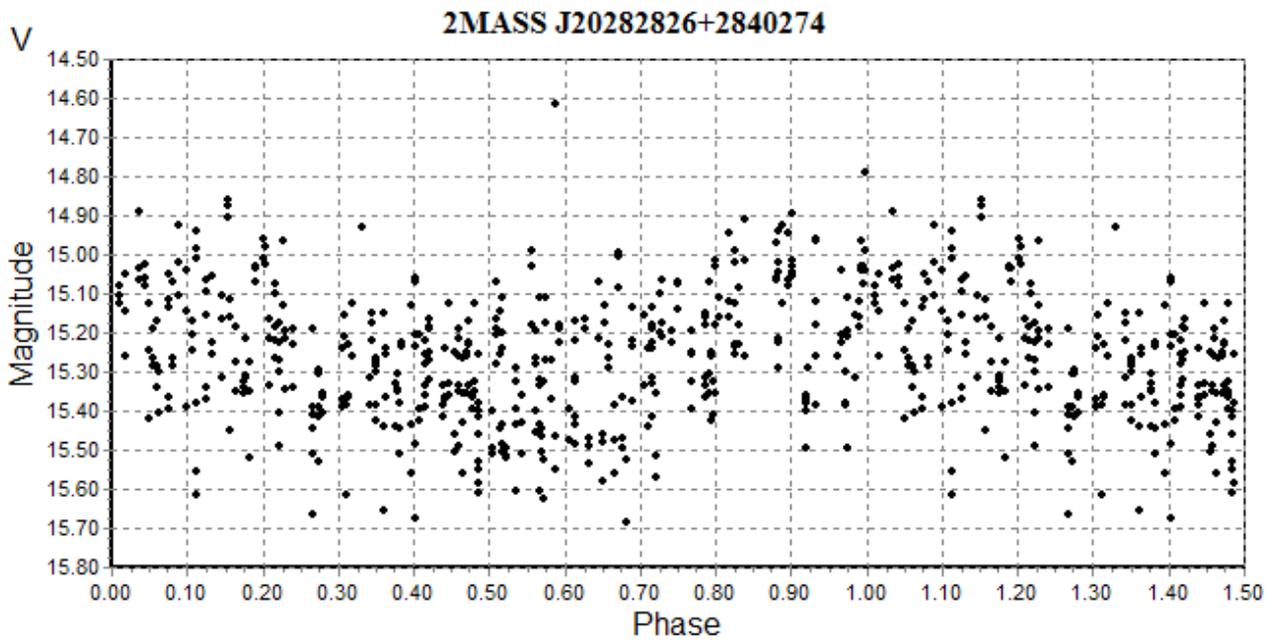
Fig.6a Phase Plot for 2MASS J20282826+2840274

Fig.7 Photometric curve for 2MASS J20280514+2452594

2MASS J20280514+2452594

C= 2457910 + 68.7 *E
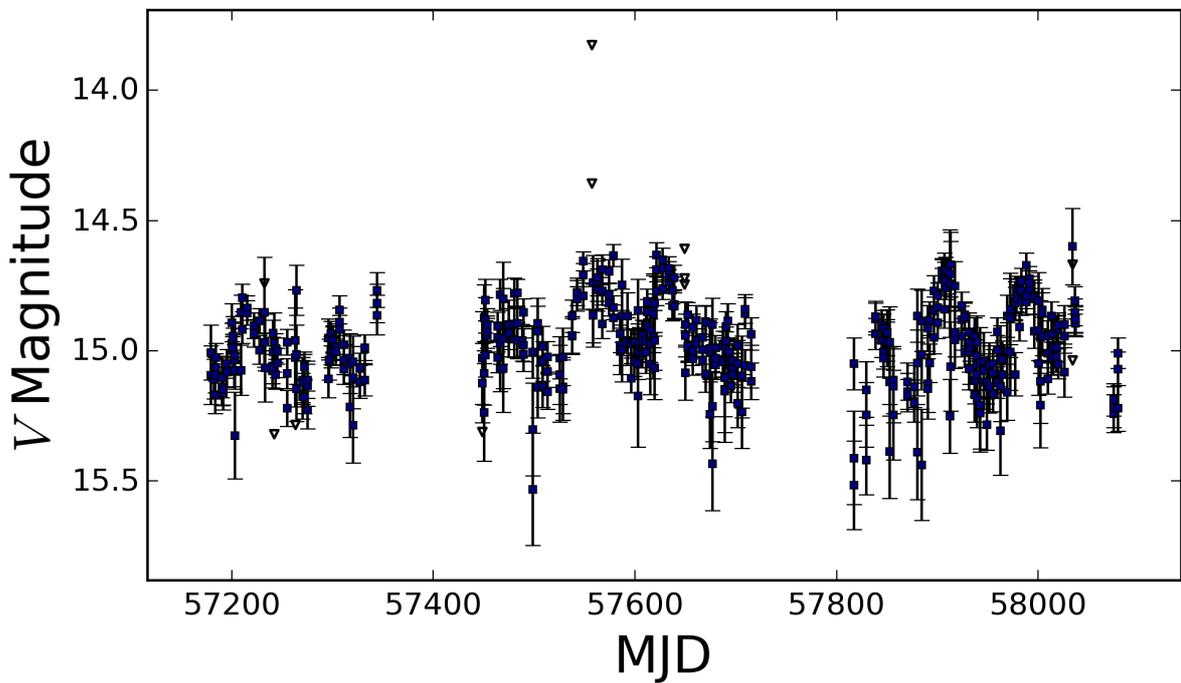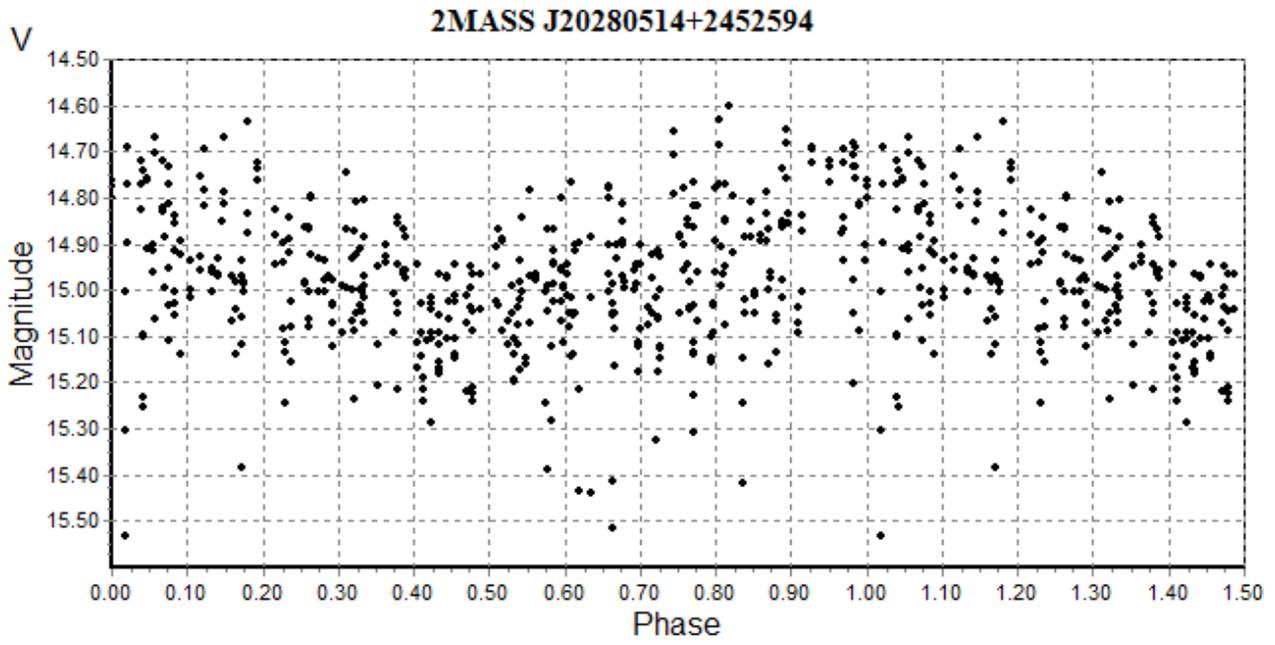
Fig.7a Phase Plot for 2MASS J20280514+2452594

R.A. = 18:05:40.40   Dec = 25:42:31.0
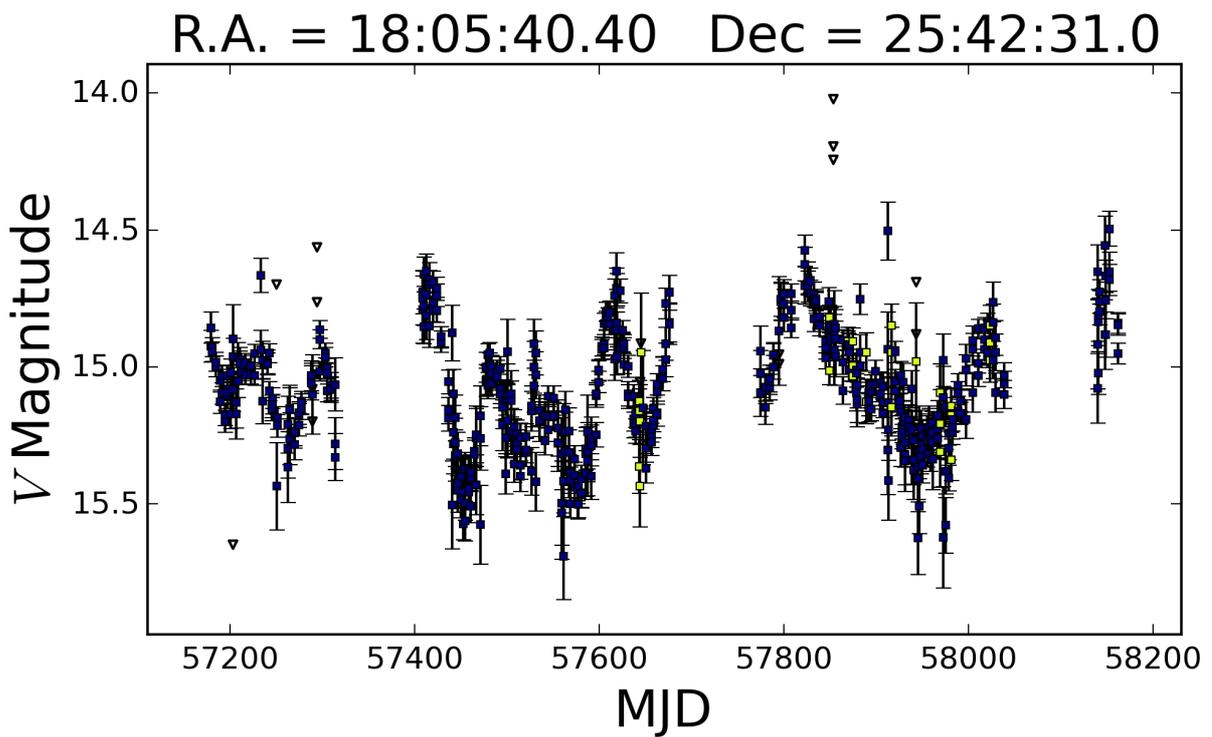
Fig.8 Photometric curve for 2MASS J18054024+2542318

2MASS J18054024+2542318
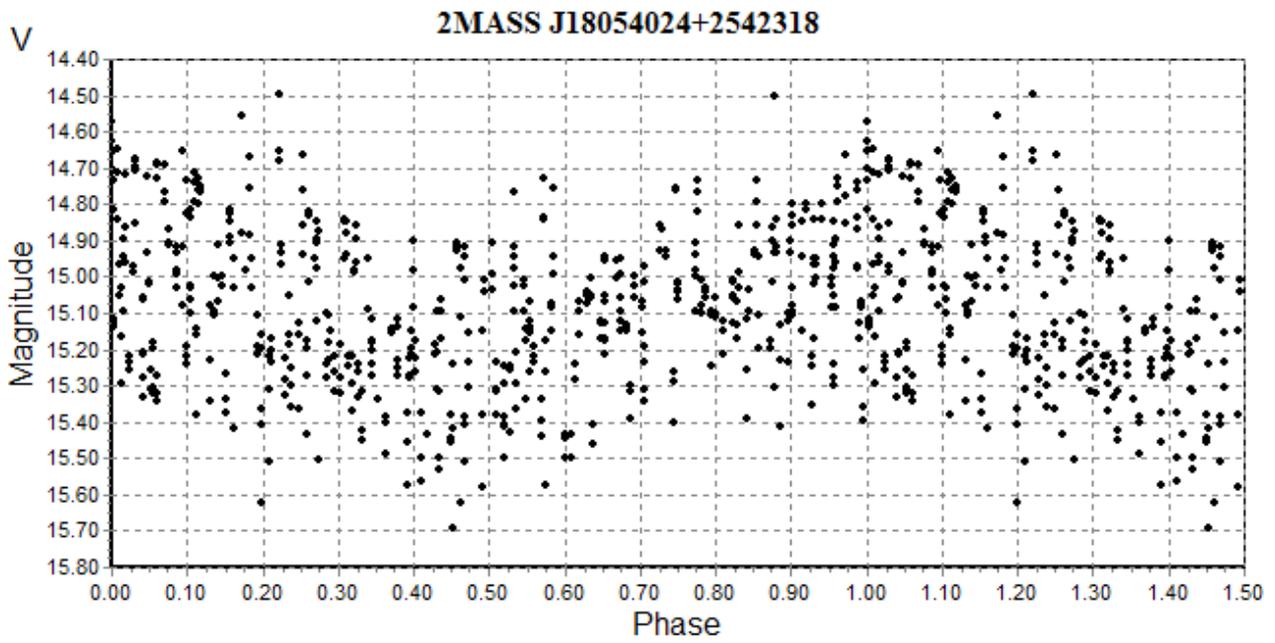
C= 2457413 + 102.5 *E

Fig.8a Phase Plot for 2MASS J18054024+2542318

R.A. = 20:25:30.04   Dec = 20:58:29.8
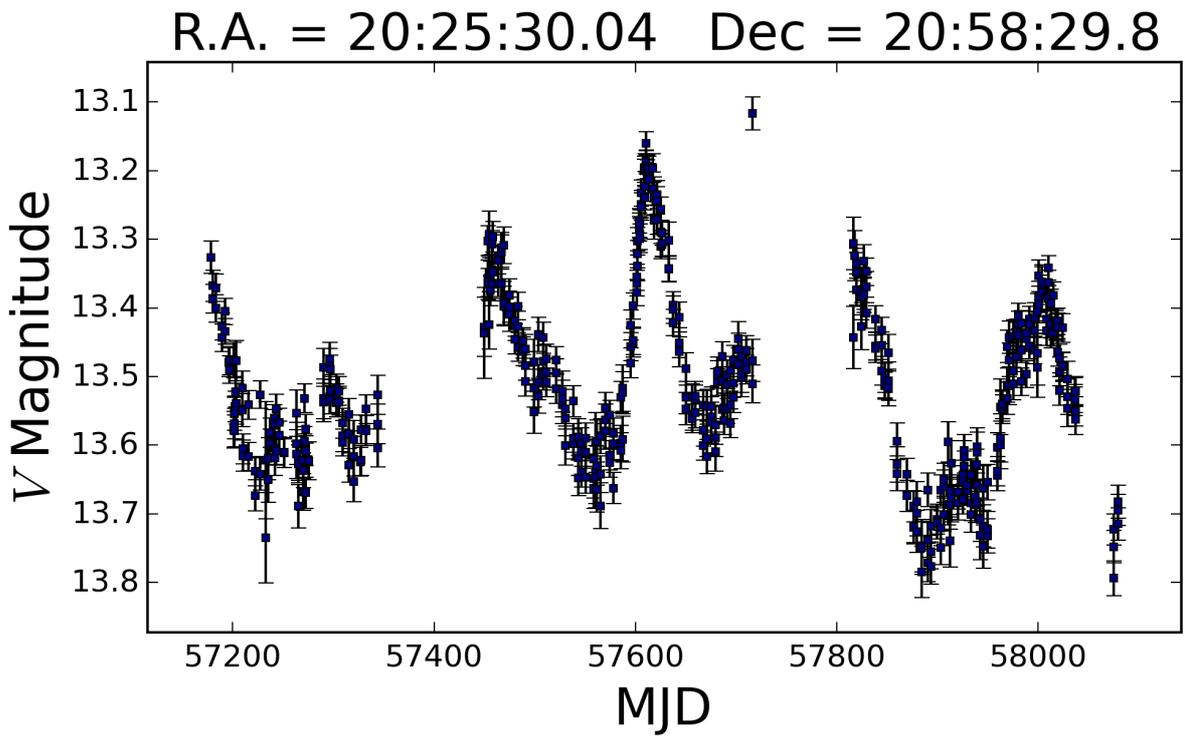
Fig.9 Photometric curve for 2MASS J20253003+2058298
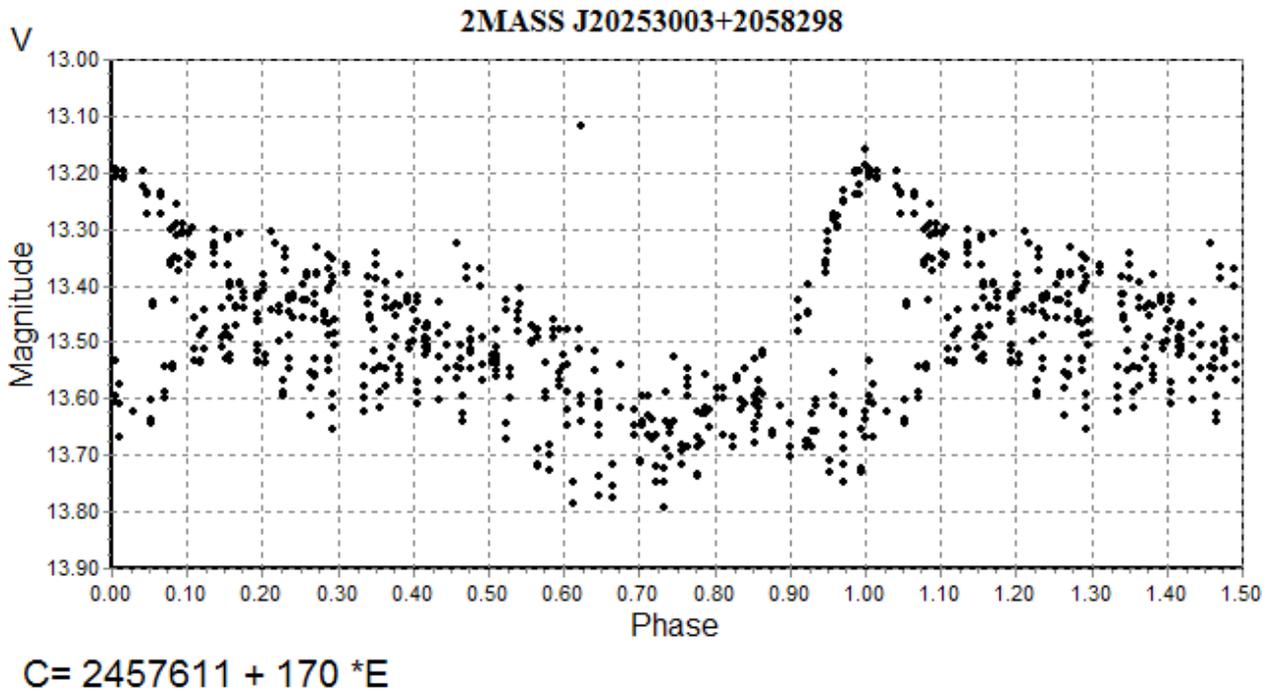
Fig.9a Phase Plot for 2MASS J20253003+2058298
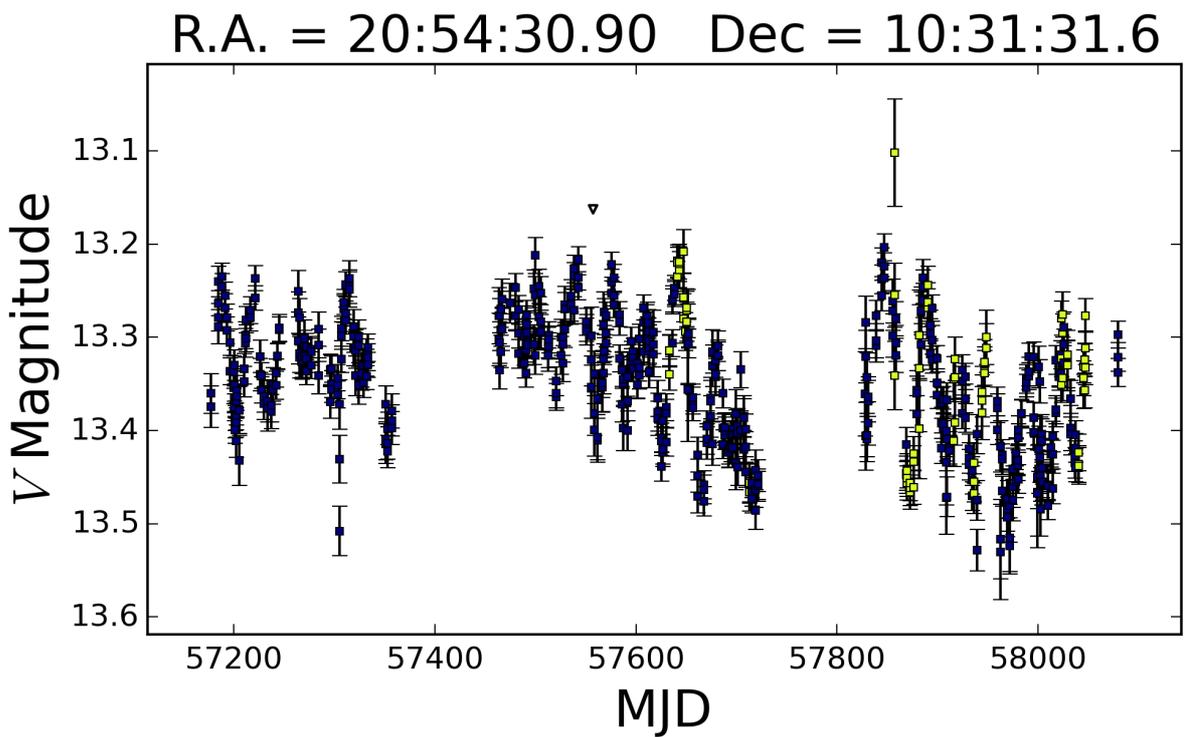
Fig.10 Photometric curve for 2MASS J20543096+1031316

2MASS J20543096+1031316

C= 2457642 + 34.8 *E
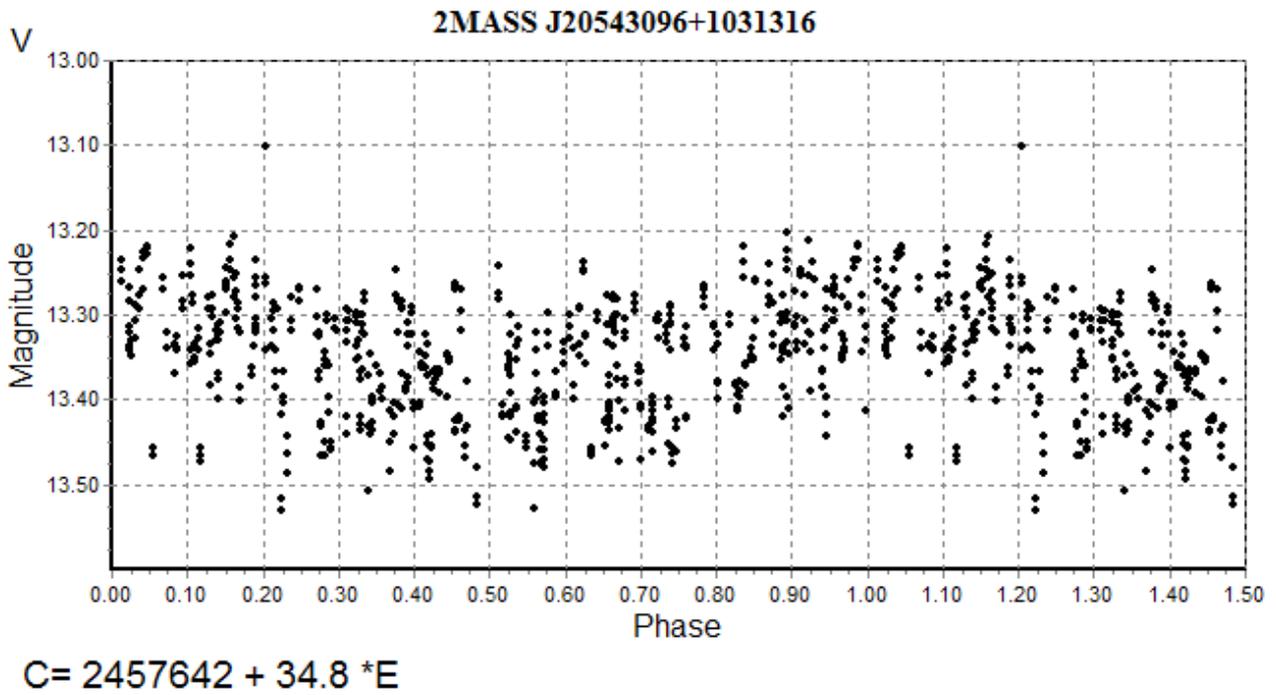
Fig.10a Phase Plot for 2MASS J20543096+1031316

R.A. = 18:50:04.60   Dec = 19:35:32.9
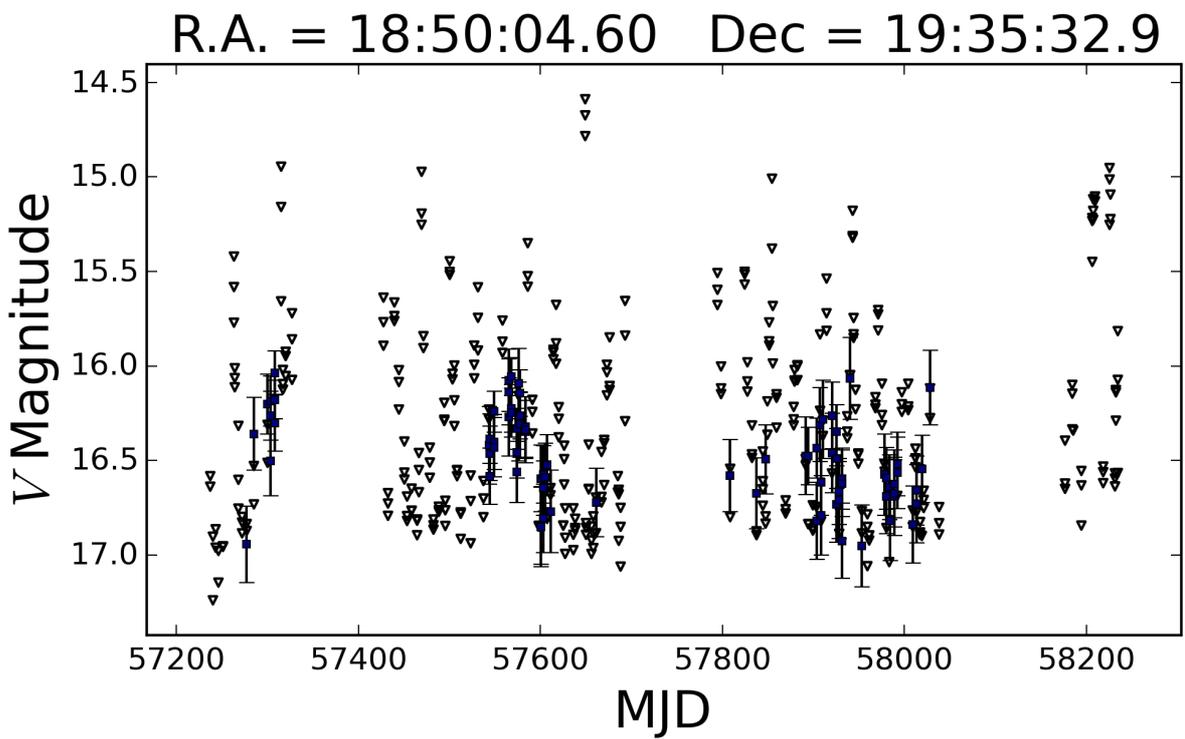
Fig.11 Photometric curve for 2MASS 18500459+1935329

R.A. = 20:29:04.82   Dec = 28:53:03.7
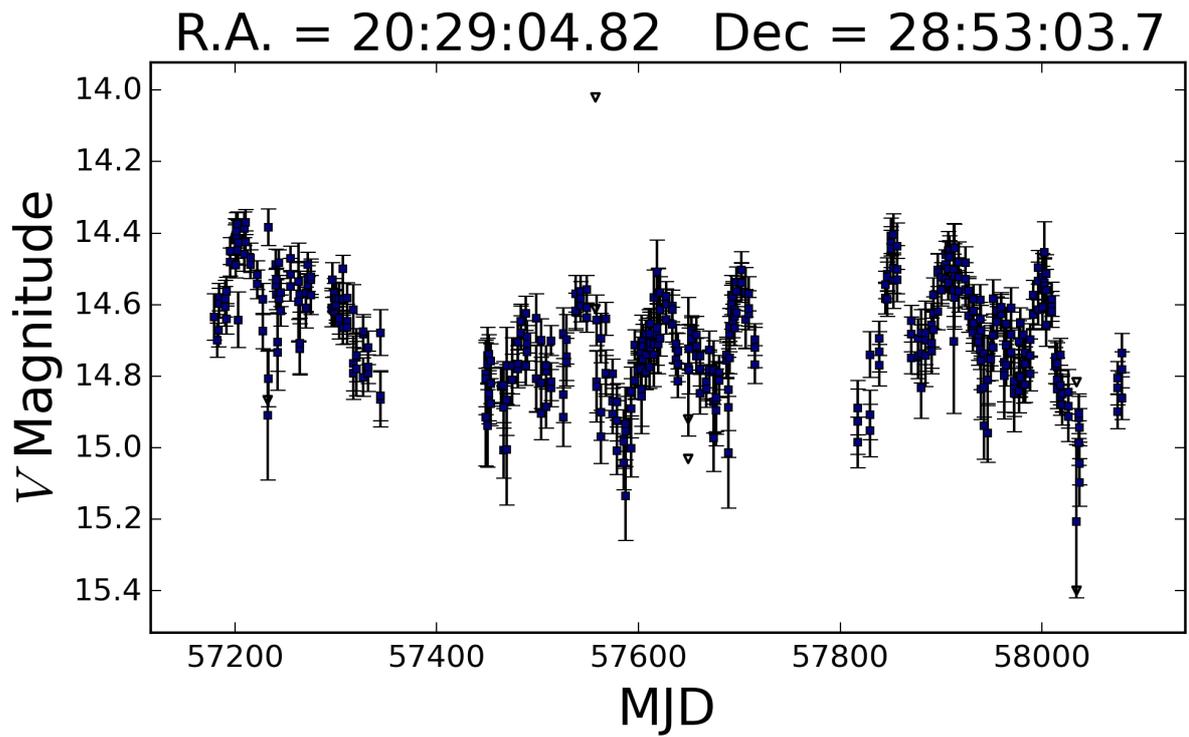
Fig.12 Photometric curve for 2MASS J20290482+2853035

2MASS J20290482+2853035

C= 2457202 + 71.4 *E
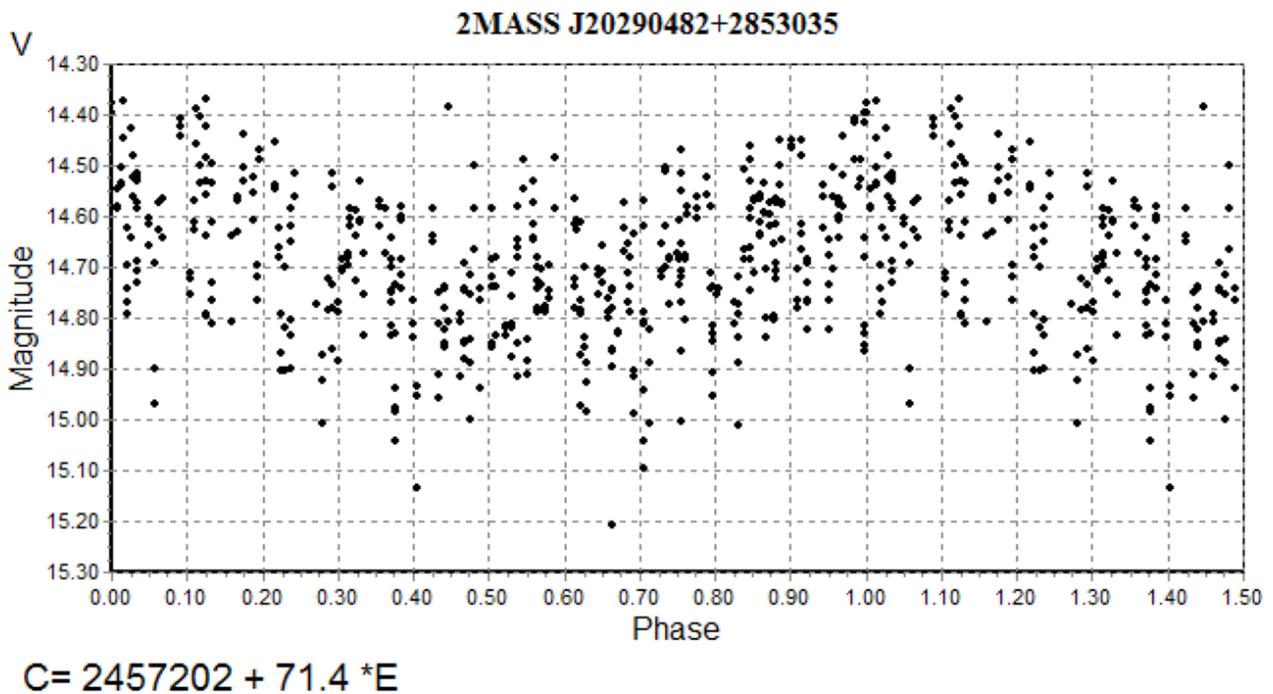
Fig.12a Phase Plot for 2MASS J20290482+2853035

R.A. = 20:28:51.55   Dec = 24:38:34.7
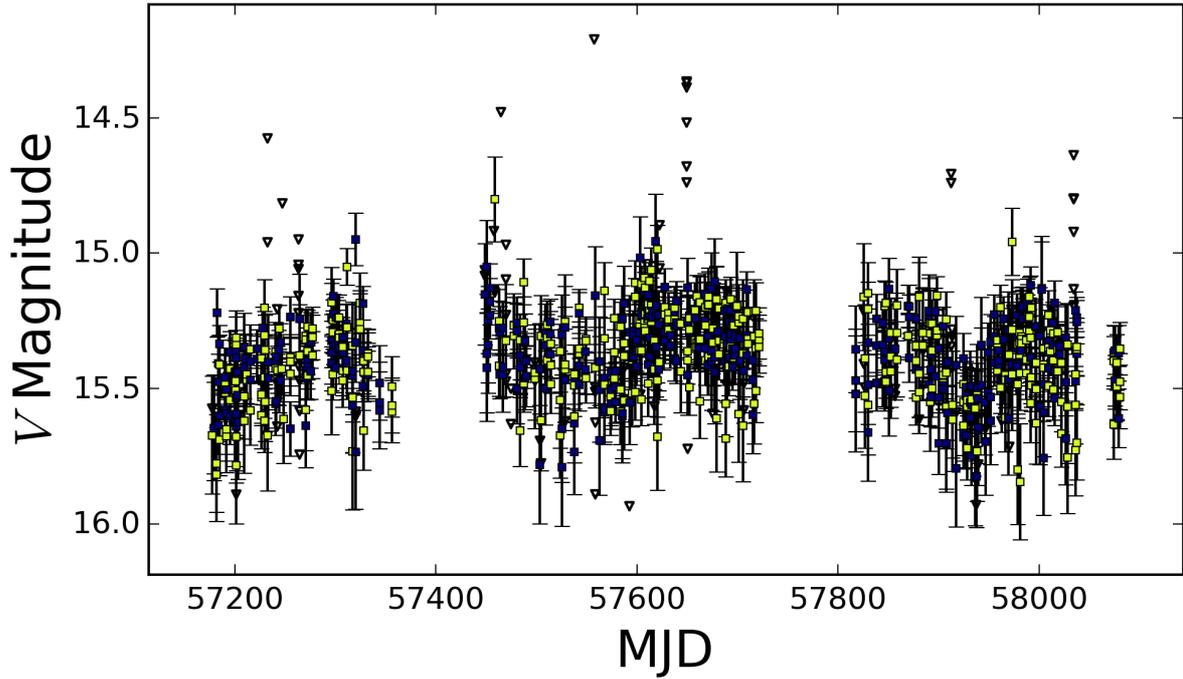
Fig.13 Photometric curve for 2MASS J20285155+2438348

R.A. = 18:39:40.30   Dec = 20:32:39.2
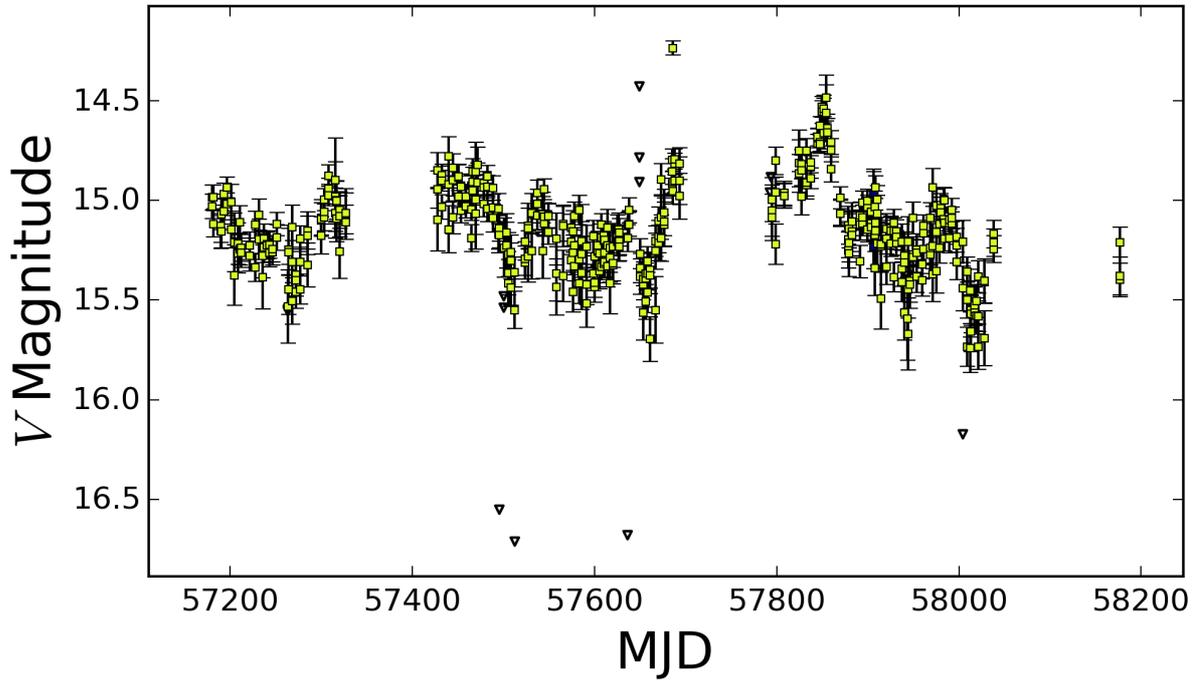
Fig.14 Photometric curve for 2MASS J18341366+1323416

2MASS J18394029+2032390
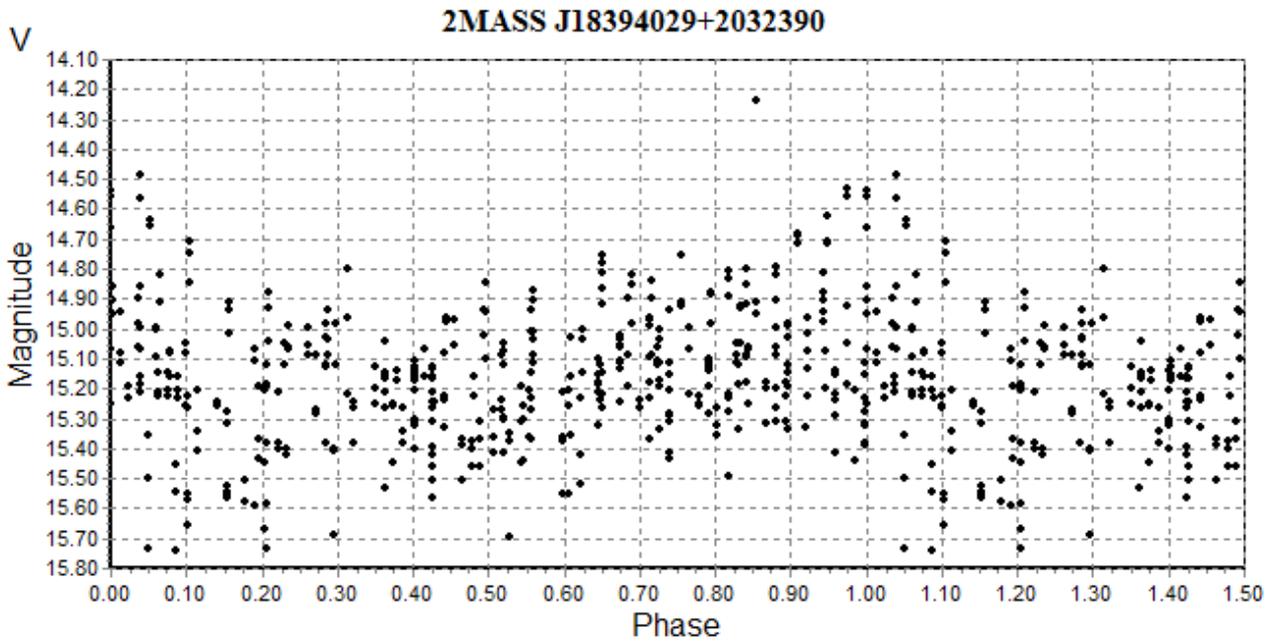
C= 2457852 + 77 *E

Fig.14a Phase Plot for 2MASS J18394029+2032390

R.A. = 20:25:45.12   Dec = 19:55:45.8
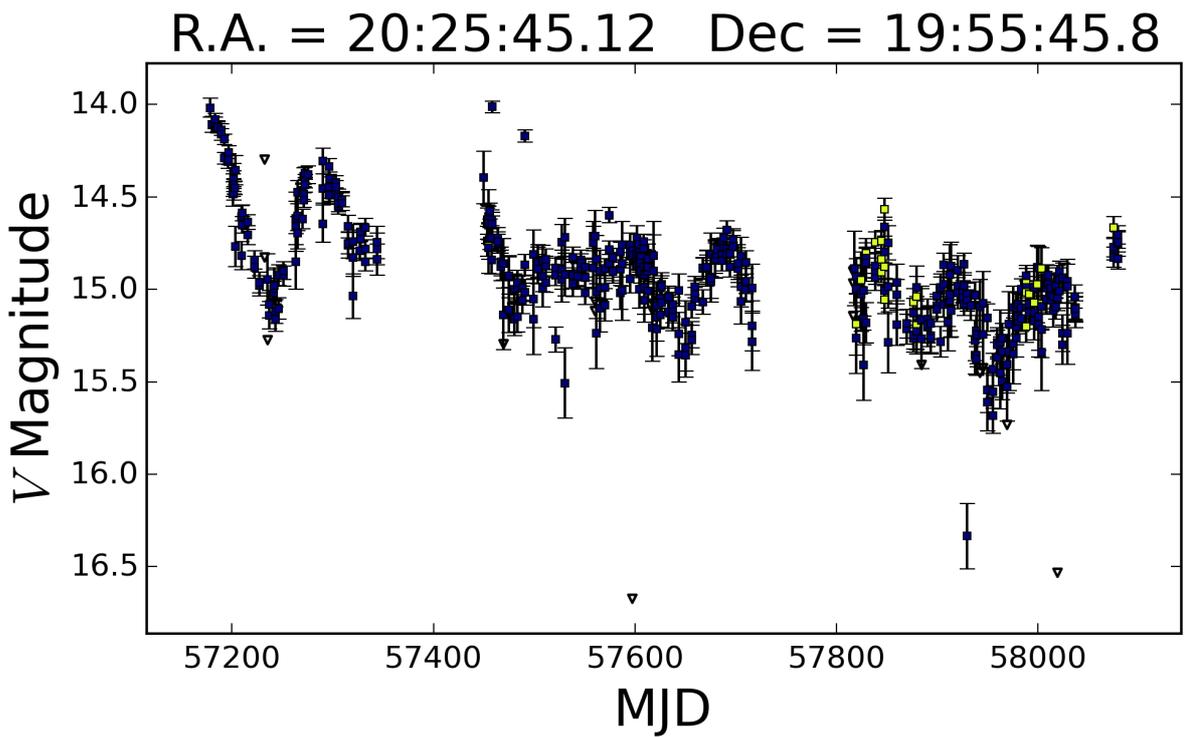
Fig.15 Photometric curve for 2MASS J20254512+1955457

2MASS J20254512+1955457

C= 2457287 + 104 *E
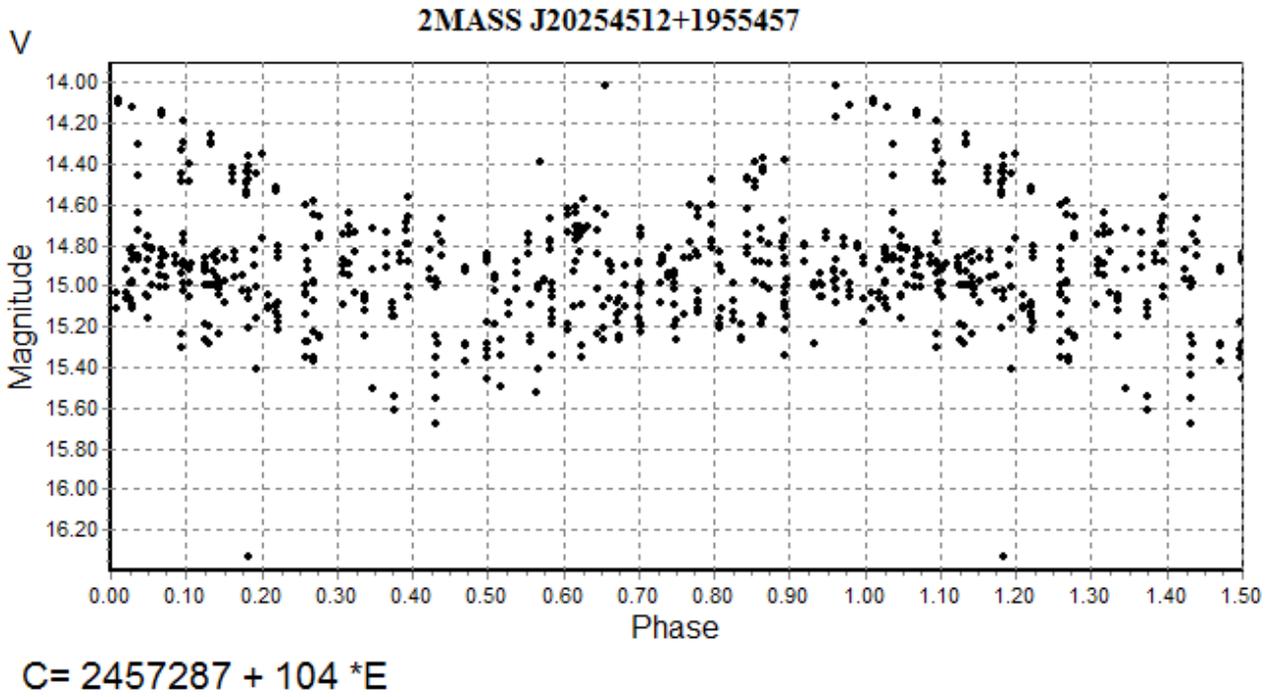
Fig.15a Phase Plot for 2MASS J20254512+1955457

R.A. = 18:25:31.70   Dec = 2:54:35.6
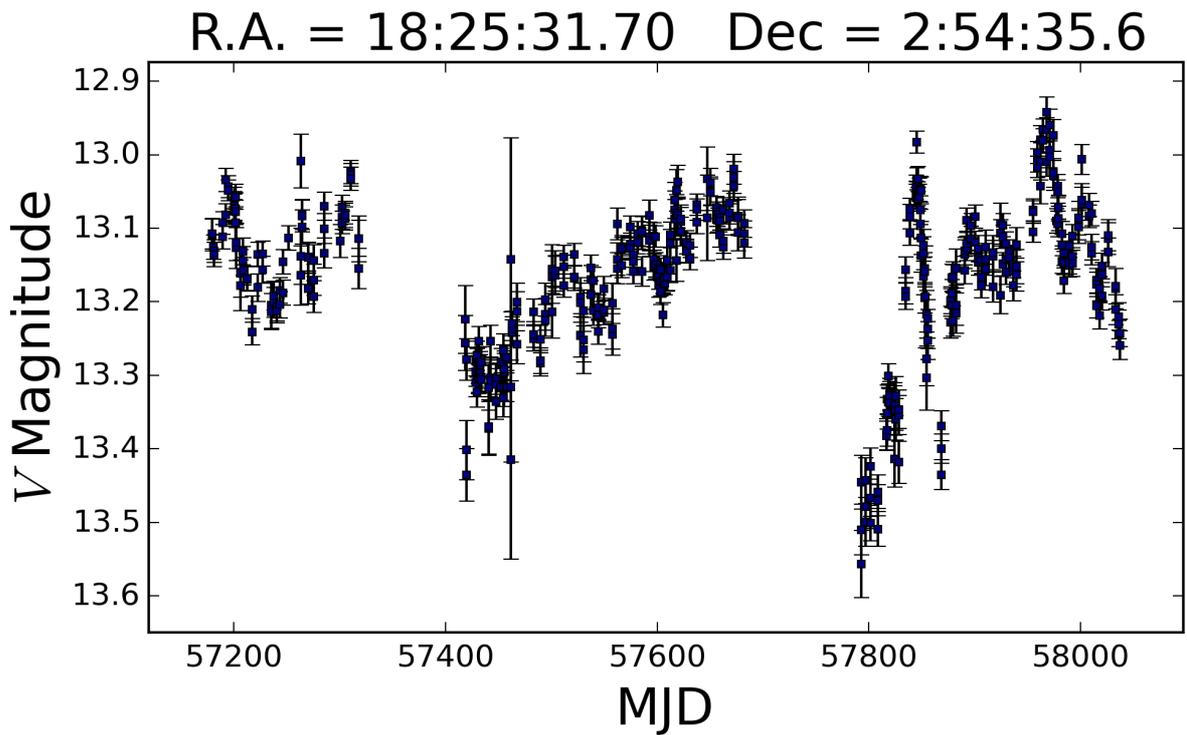
Fig.16 Photometric curve for 2MASS J18253167+0254356

2MASS J18253167+0254356

$$C = 2457969 + 65.4 *E$$
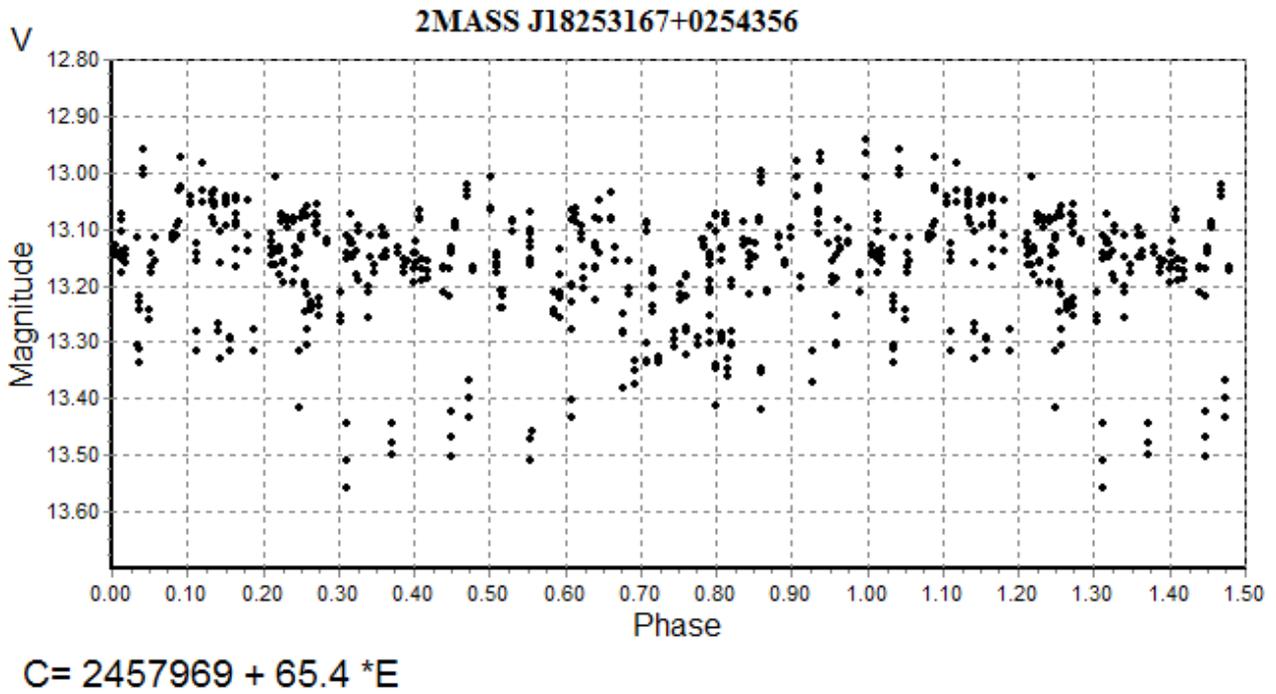
Fig.16a Phase Plot for 2MASS J18253167+0254356

R.A. = 18:26:58.20   Dec = 12:20:06.7
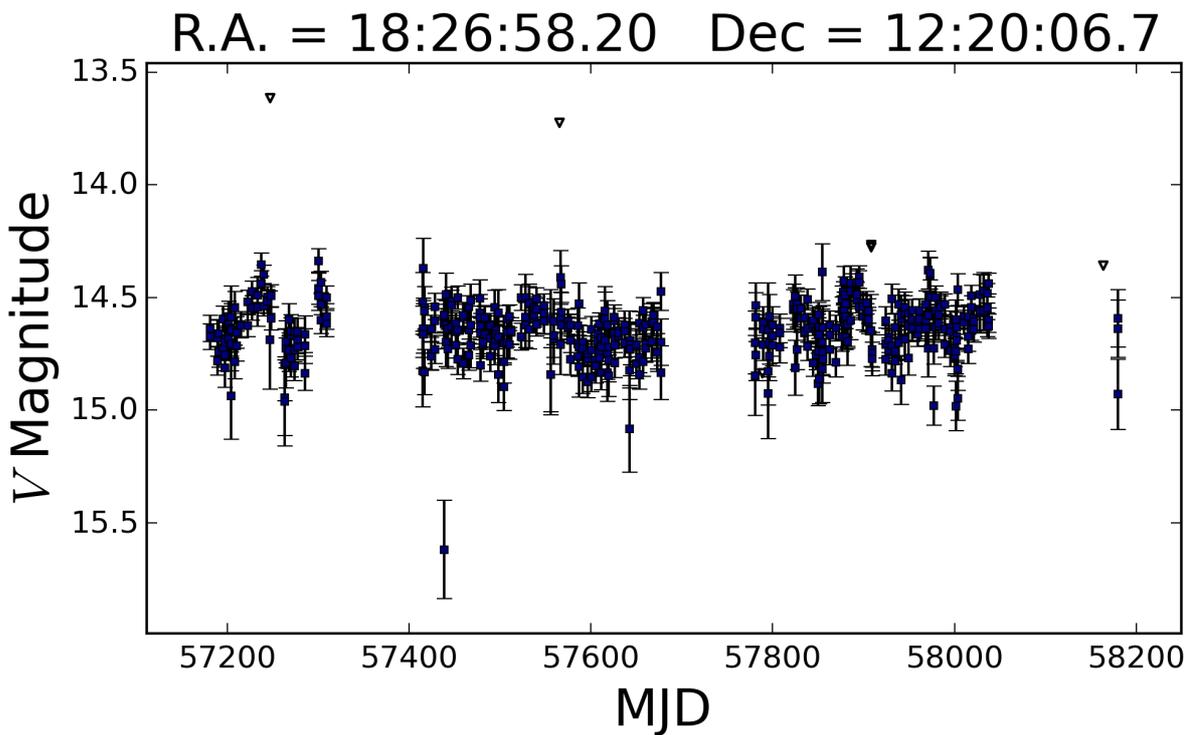
Fig.17 Photometric curve for 2MASS J18265819+1220067

2MASS J18265819+1220067

C= 2457234 + 66.5 *E
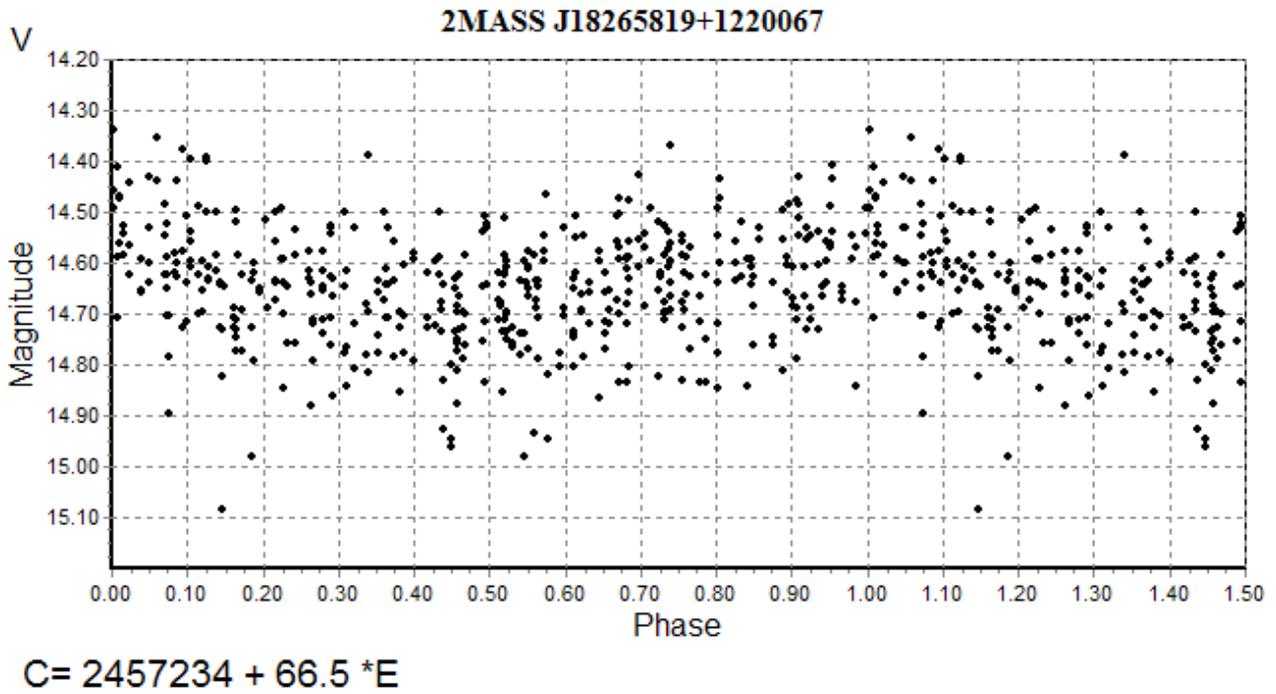
Fig.17a Phase Plot for 2MASS J18265819+1220067

R.A. = 18:33:34.07   Dec = 19:45:56.5

Fig.18 Photometric curve for 2MASS J18333406+1945563

2MASS J18333406+1945563

C= 2457209 + 137 *E
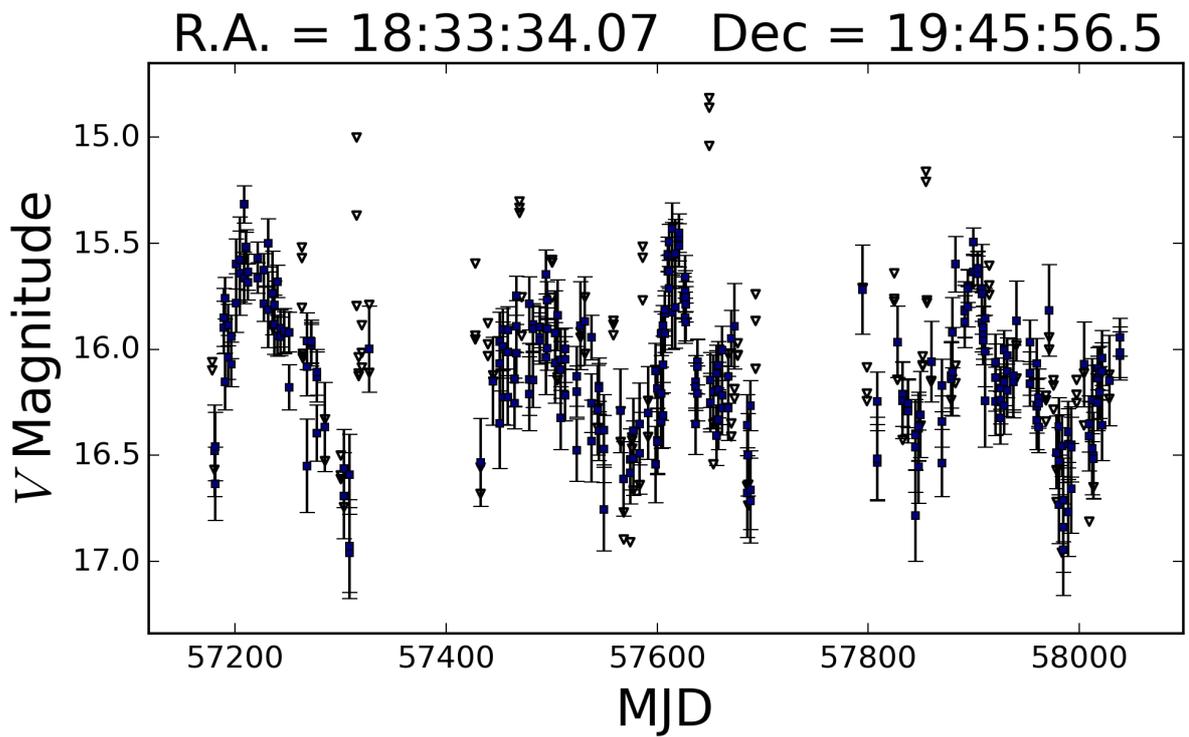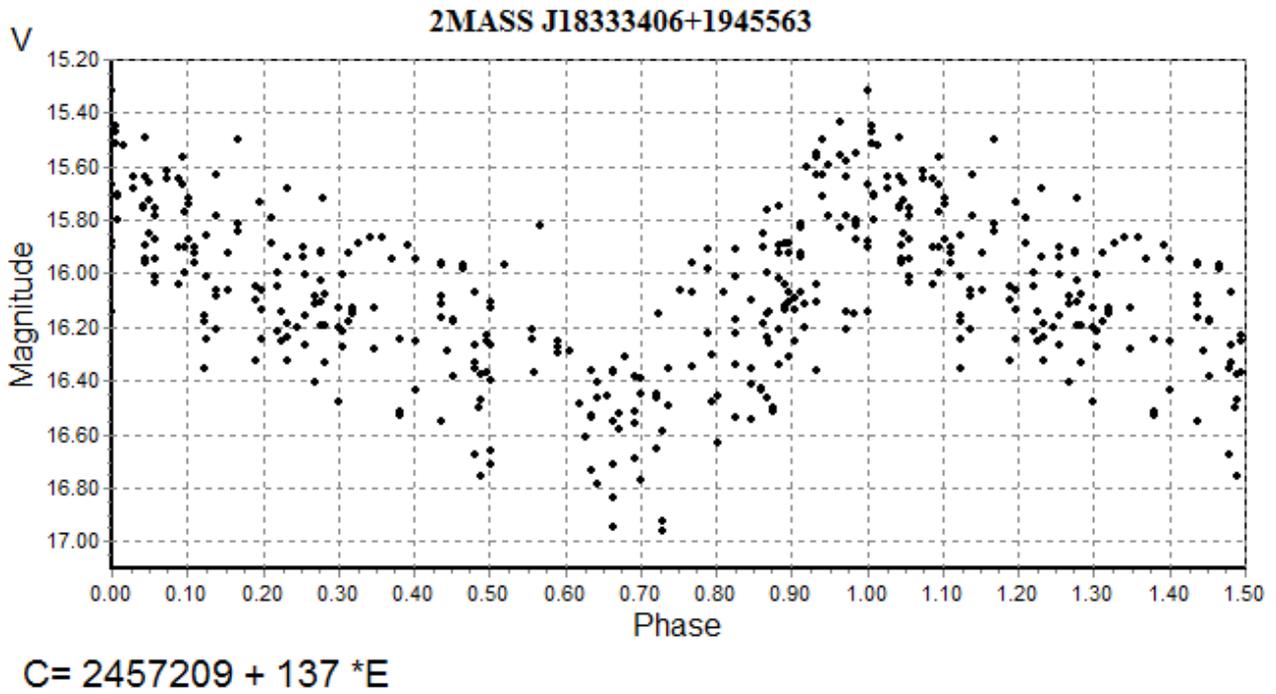
Fig.18a Phase Plot for 2MASS J18333406+1945563

R.A. = 18:33:39.30   Dec = 13:10:42.4

Fig.19 Photometric curve for 2MASS J18333935+1310426
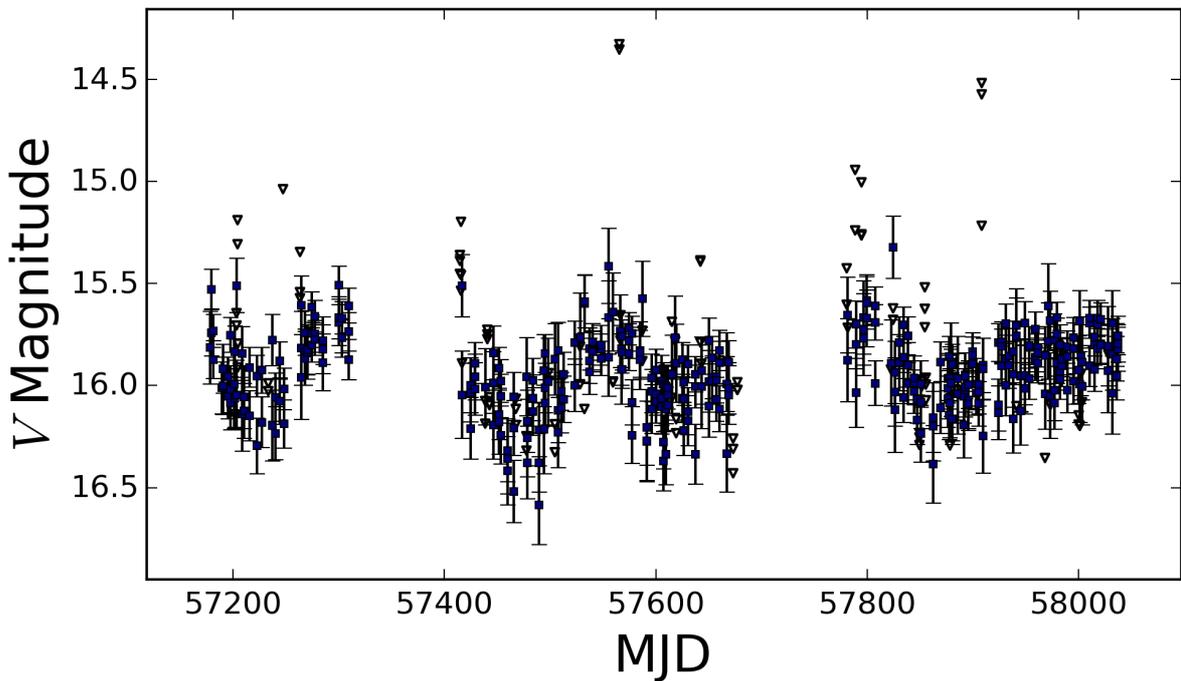
2MASS J18333935+1310426
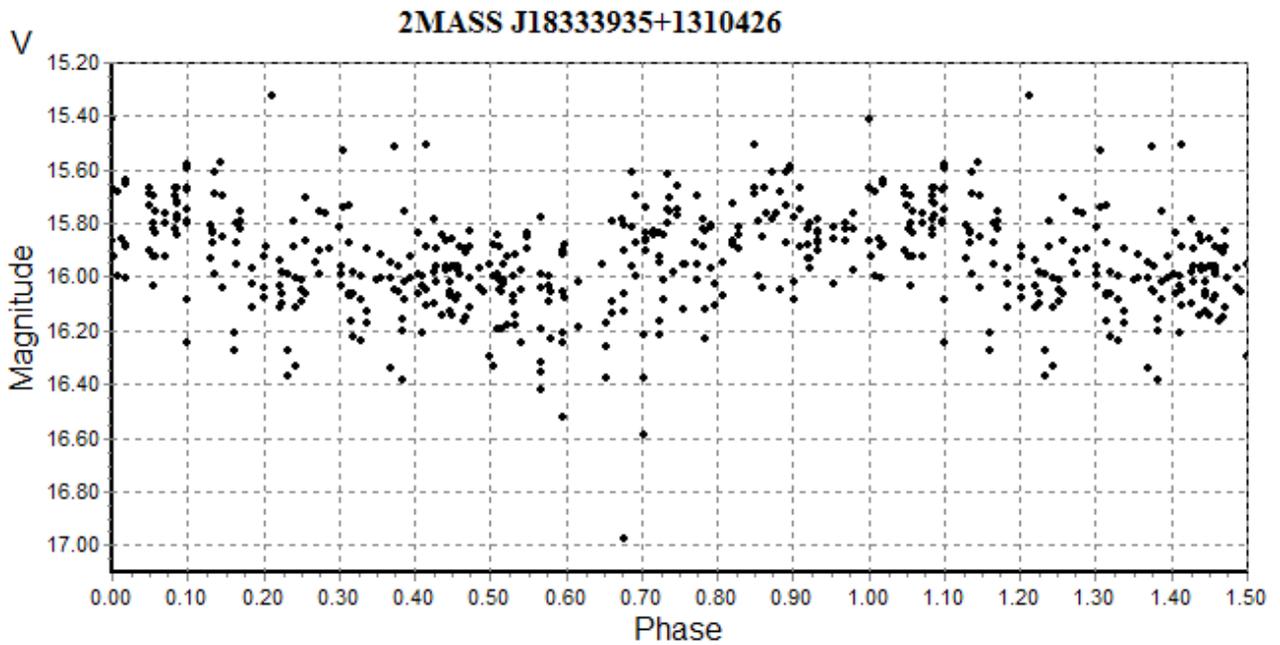
C= 2457556 + 222 *E

Fig.19a Phase Plot for 2MASS J18333935+1310426

R.A. = 7:09:59.60   Dec = 0:17:19.8
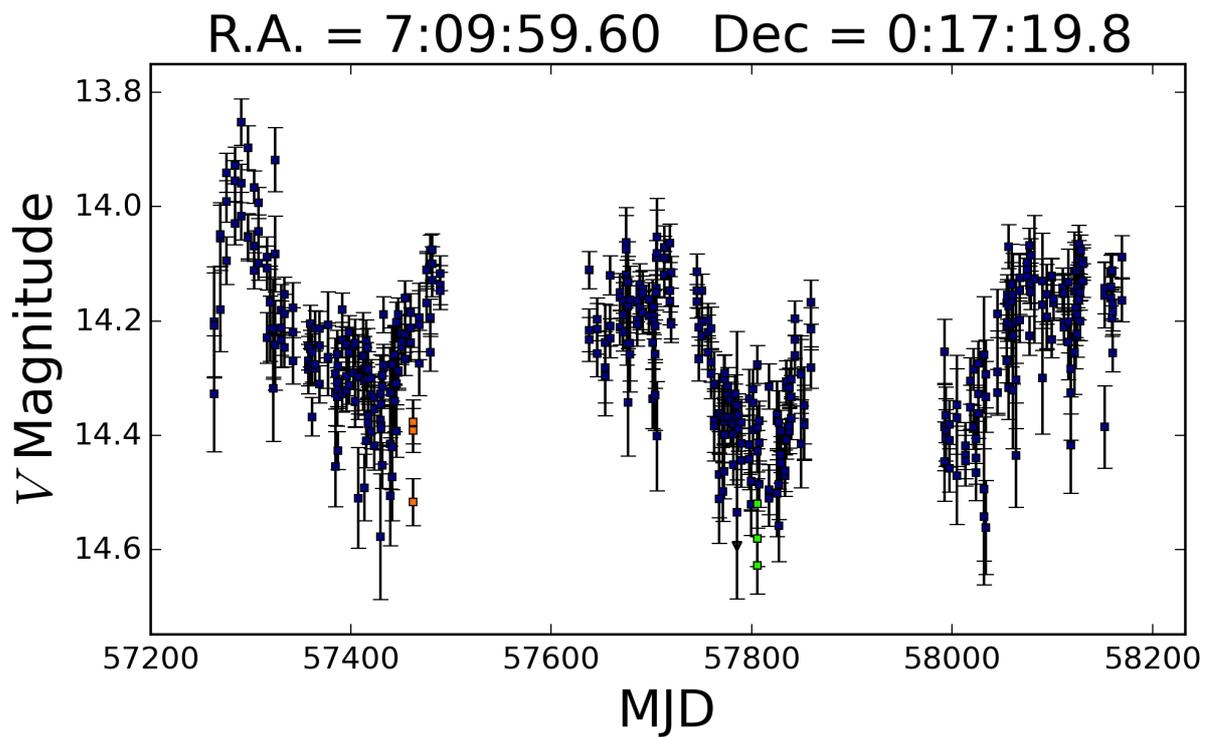
Fig.20 Photometric curve for 2MASS J07095965+0017197

2MASS J07095965+0017197

C= 2457291 + 200.8 *E
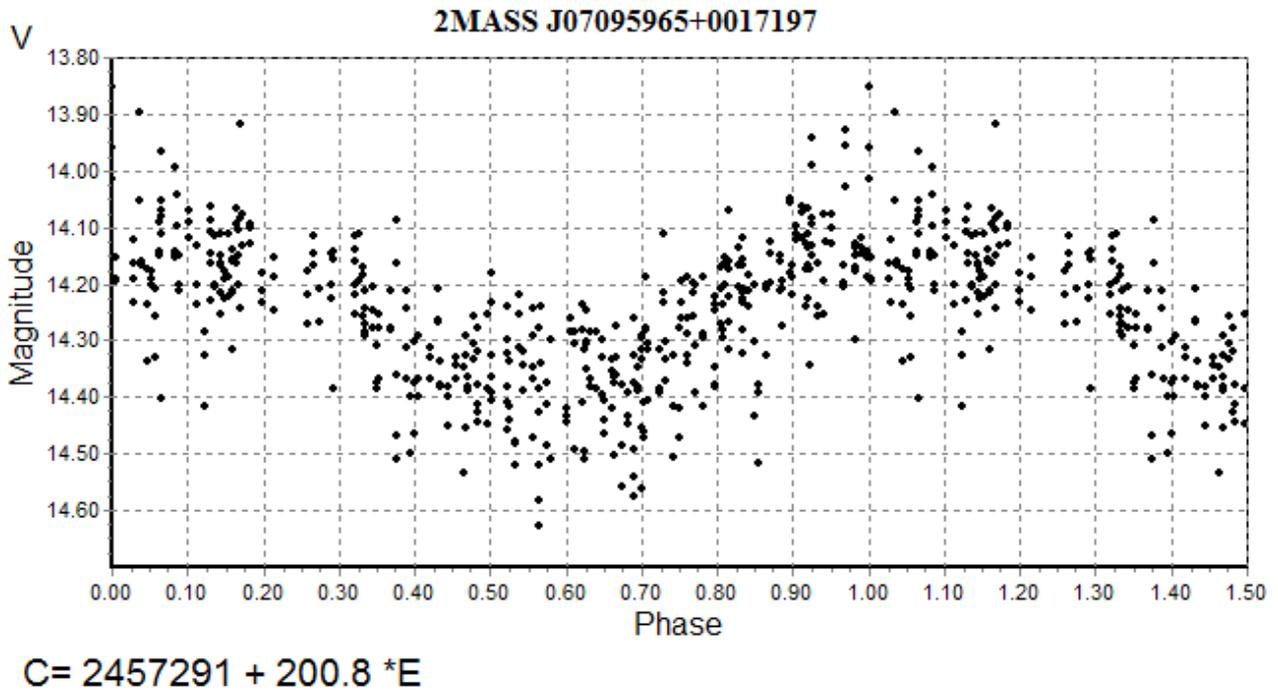
Fig.20a Phase Plot for 2MASS J07095965+0017197

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