

BRIGHTEST¹ PROBABLE MEMBER STARS OF M33

Below is a list of stars with their average² visual magnitude being brighter than +17.00. The ones in **bold face** have been confirmed in multiple papers over the last two decades, thus it is highly likely that they are member stars. That being said, I'd still try to call these stars "probable" members in your observing notes because...well, you just never know.

Map ID # ³	Average V ⁴	Range (+/-) V ⁵	Massey 2006 (V) ⁶	Local Group Galaxy Survey ID # or other ⁷ ...	[HS80] # ⁸	[MBH 96] # ⁹	Pul Catalog # ¹⁰	[SM06] # ¹¹	Alternate ID	Type ¹²	In OB association ¹³
100	14.85	0.15	14.859	LGGs J013355.96+304530.6	B324	UIT 247	Pul -3 120209	W10372		A8-F0Ia^	A67/IC 142
101	15.74	0.41	16.429	LGGs J013335.14+303600.4			Pul -3 120137	W31284	[HS53] Var C	LBV	--
102			15.996	LGGs J013411.32+304631.4	B403			W11781		--	A75
103			16.013	LGGs J013349.86+303246.1	7B			W21097		F8I	A07
104	16.06	0.355	16.027	LGGs J013410.93+303437.6			Pul -3 120253	W21206	[VHK75] Var 83 FSZ 394	LBV	--
105	16.07	0.09	16.084	LGGs J013406.63+304147.8	B416	UIT 301		W11324		O9.5Ia^	A94
106			16.086	LGGs J013346.13+303653.8		UIT 197				A0Ie:	--
107	16.19	0.06	16.285	LGGs J013341.28+302237.2	110A		Pul -3 120163			B1Ia^	A110
108			16.201	LGGs J013337.31+303111.1	12A		Pul -3 120144			F8I	A12
109			16.335	LGGs J013350.42+303833.9		UIT 215				B2Ib	A142
110			16.343	LGGs J013349.31+305152.6	B255	UIT 207	Pul -3 120186		FSZ 244	B5Ia	A34
111	16.35	0.09	17.381	LGGs J013358.70+303526.5	B457^^		Pul -3 120215	W20549		B1Ia+WNE	A02
112			16.370*	--		UIT 365				--	A85/NGC 604
113	16.40	0.075	17.120	LGGs J013416.10+303344.9	B526^^	UIT 341		W20380	FSZ 423	B2.5Ia	A101
114			16.400**	2MASS J01341650+3051551	B384***		Pul -3 120267		FSZ 425	--	A38
115	16.44	0.255	16.165	LGGs J013352.42+303909.6			Pul -3 120196	W11870		F0Ia^	--
116			16.440	LGGs J013300.23+302323.7	117A					A0I	A117
117			16.442	LGGs J013233.85+302728.9	R354A^^^					F2I	A123
118			16.457	LGGs J013351.84+303827.4				W20888		--	A142
119	16.49	0.08	16.489	LGGs J013420.95+303039.9			Pul -3 120279			A5-8I	--
120			16.494	LGGs J013311.44+304856.9	B92a^^^^	UIT 052	Pul -3 120087		FSZ 60	WNE+B3I	A135
121			16.498	LGGs J013327.65+303751.2			Pul -3 120120			A5-A8I	--
122	16.51	0.19	16.185	LGGs J013358.05+304539.9	68A			W11738		--	A68
123			16.551	LGGs J013311.25+304515.4		UIT 049	Pul -3 120086			BI+neb	--****
124	16.56	0.40	16.812	LGGs J013311.88+303853.7	B67	UIT 056				WNL	A59/NGC 592
125	16.57	0.25	16.546	LGGs J013337.00+303637.5			Pul -3 120140	W31732		F5-8Ia	--
126			16.605	LGGs J013345.15+303620.1	B217b			W21323		--	A48
127			16.652	LGGs J013335.48+310040.0	B158	UIT 135				B8I	A140
128	16.68	0.095	16.819	LGGs J013350.12+304126.6		UIT 212	Pul -3 120188		FSZ 256	cLBV^	A64

129			16.727	LGGJ J013242.92+303847.0		UIT 005	Pul -3 120049	FSZ 8	B2.5Ia	--
130	16.73	0.20	16.643	LGGJ J013351.00+303818.8				FSZ 265	--	A142
131			16.743	LGGJ J013351.65+303225.9	7A		W21555		--	A07
132			16.747	LGGJ J013348.36+304242.1			Pul -3 120182	W11579	--	--
133			16.785	LGGJ J013315.82+305644.8		UIT 087		[MC83] 23	WN4.5+O	IC 132
134	16.79	0.07	16.851	LGGJ J013316.46+303212.0	17B		W30697	FSZ 80	A5-8Ia	A17
135			16.829	LGGJ J013357.70+304824.1			W11409		F5I	A69
136			16.846	LGGJ J013343.19+303906.2		UIT 176		FSZ 207	WN7	--
137	16.86	0.13	16.899	LGGJ J013358.92+304139.4			W10678		F5Ia	--
138			16.865	LGGJ J013352.56+303815.9			W20870		--	A142
139	16.88	0.25	16.868	LGGJ J013352.39+303920.9		UIT 229			--	--
140			16.915	LGGJ J013348.48+304510.6	B263				--	A66c
141			16.929	LGGJ J013339.28+303118.8	R211		W22354		M1Ia	A12/IC 137
142			16.933	LGGJ J013356.58+303826.6			W20886		--	A143
143	16.94	0.13	17.183	LGGJ J013359.40+302311.0			Pul -3 120219		A0Ia	A109
144			16.967	LGGJ J013355.62+303500.8			Pul -3 120208	W20509	--	--
145	17.00	0.12	16.837	LGGJ J013424.78+303306.6			Pul -3 120290		B8-A0Ia^	--
146	17.00	0.24	16.994	LGGJ J013303.09+303101.8	B48		Pul -3 120069	FSZ 41	A0-2eIa^	A128
147			17.008	LGGJ J013410.90+303840.8			W21486		--	--
148	17.02	0.135	17.612	LGGJ J013245.41+303858.3	B7	UIT 008			Ofpe	A27/NGC 588

Red are within 2' of M33's core, making them extremely difficult to see.

¹ – Not to be confused with the most *luminous* stars of M33, which aren't necessarily the brightest *visually*.

² – Remember that to be visible 2.77 million light-years away, these stars have to be quite exceptional. Thus all of them display some variability and may not be at their brightest when you happen to try for them.

³ – As labeled on the **M33 Clusters & Stars Finder Chart**. Any in **red**, however, are not labeled.

⁴ – From Martin, J. & Humphreys, R. 2017, AJ, 154, 81 after eliminating those listed as foreground dwarfs in Gordon, M., Humphreys, R. & Jones, T. 2016, ApJ, 825, 50 and those with a GAIA DR2 parallax more than 0.10 *mas*.

⁵ – Variability ranges are from Martin & Humphreys (2017). For more current figures, see [Multi-Epoch BVRI Photometry for All Targets in M31 and M33](#), an ongoing monitoring program maintained by John C. Martin (University of Illinois Springfield Henry R. Barber Research Observatory).

⁶ – From Massey, P., et al. 2006, AJ, 131, 2478 after eliminating those listed as foreground dwarfs in Drout, M., Massey, P. & Meynet, G. 2012, ApJ, 750, 97 and Gordon, M., Humphreys, R. & Jones, T. 2016, ApJ, 825, 50.

⁷ – To correctly identify these stars on a map, the author suggests typing their coordinates into [AladinLite](#). For example, the coordinates of 2MASS J01341650+3051551 are simply RA 00:45:10.04 Dec +41:36:57.3

⁸ – From Humphreys, R. & Sandage, A. 1980, ApJS, 44, 319

⁹ – From Massey, P., Bianchi, L., Hutchings, J. & Stecher, T. 1996, ApJ, 469, 629

¹⁰ – From Khrutskaya, E., Khovritchev, M. & Bronnikova, N. 2004, A&A, 418, 357

¹¹ – From Shporer, A. & Mazeh, T. 2006, MNRAS, 370, 1429

¹² – Listed as such in [SIMBAD](#) as of January 1, 2021

¹³ – As they are labeled and their boundaries drawn in Humphreys, R. & Sandage, A. 1980, ApJS, 44, 319

* – From Massey, P., Bianchi, L., Hutchings, J. & Stecher, T. 1996, ApJ, 469, 629. The massive H-II/star-forming region known as NGC 604 harbors many luminous stars, but many of them are so close together that all you will see is their combined light. UIT 365 however happens to be not only the brightest star in NGC 604 but also fairly isolated.

** – From Grimm H.-J., et al. 2005, ApJS, 161, 271

*** – Lies at the heart of A38 and is tightly surrounded by a nebula known as BCLMP 691.

**** – Lies just outside of A29/IC 131 and is tightly surrounded by a nebula that is sometimes mistakenly labeled as BCLMP 290. In Viallefond, F., Donas, J. & Goss, W. 1983, A&A, 119, 185 it was given the more common designation of IC 131-West due to it being the western radio component of IC 131.

^ – Listed as a candidate Luminous Blue Variable (LBV) in Massey, P., Neugent, K. & Smart, B. 2016, AJ, 152, 62

^^ – Is actually an extremely close double star.

^^^ – Has R354 (a magnitude +18.21 RSG) only 3" away.

^^^^ – Has B91 (magnitude +17.02 and F8I) only 6.5" away.

Beware NGC 592!

The giant star-forming region known as NGC 592 was discovered late in 1858 by R. J. Mitchell, an assistant observing with the 72-inch reflector of William Parsons, the third Earl of Rosse. Ever since then, it has fooled countless observers – including myself – into thinking that it's easier to see than it actually is. What's happening is that in a small telescope, the brightest object that's visible in M33 is NGC 604, which just happens to be the largest H II/star-forming region in the Local Group. The next brightest after that appears to be NGC 592, with NGC 588 and NGC 595 coming in nearly tied for third. But what I've come to learn is that what makes NGC 592 *appear* so bright is the two foreground stars of magnitude +14.6 (known as B71) and +15.9 superimposed on it. So to actually claim seeing NGC 592, observers must be able to see a soft glow roughly 0.5' in diameter on the northwest side of B71 – and a UHC type filter can help by bringing out what nebula is there. Interestingly, the brightest actual member star of NGC 592 is B67 at magnitude +16.6.

