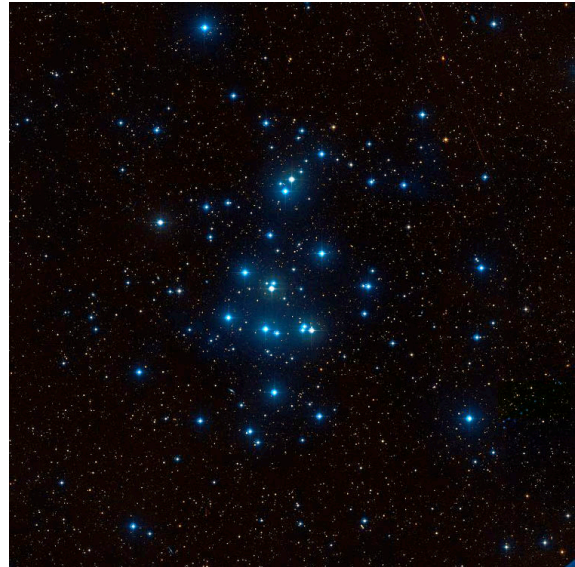


# Open Clusters

Open clusters (also known as galactic clusters) are of tremendous importance to the science of astronomy, if not to astrophysics and cosmology generally. Star clusters serve as the "laboratories" of astronomy, with stars now all at nearly the same distance and all created at essentially the same time. Each cluster thus is a running experiment, where we can observe the effects of composition, age, and environment. We are hobbled by seeing only a snapshot in time of each cluster, but taken collectively we can understand their evolution, and that of their included stars. These clusters are also important tracers of the Milky Way and other parent galaxies. They help us to understand their current structure and derive theories of the creation and evolution of galaxies. Just as importantly, starting from just the Hyades and the Pleiades, and then going to more distant clusters, open clusters serve to define the distance scale of the Milky Way, and from there all other galaxies and the entire universe.



However, there is far more to the study of star clusters than that. Anyone who has looked at a cluster through a telescope or binoculars has realized that these are objects of immense beauty and symmetry. Whether a cluster like the Pleiades seen with delicate beauty with the unaided eye or in a small telescope or binoculars, or a cluster like NGC 7789 whose thousands of stars are seen with overpowering wonder in a large telescope, open clusters can only bring awe and amazement to the viewer.

These sights are available to all. Whether a large or small telescope is used, whether one observes with only binoculars or the unaided eye, or whether one observes from a dark sky location or a light-polluted city, these clusters are there waiting on any clear night for us to take a look.

Most of the catalogs used for this list are more obscure than the NGC and IC catalogs. However obscure these catalogs are, they contain many wonderful objects that are visible in the smallest of telescopes. By observing out of unfamiliar catalogs, the observer will see clusters that are generally overlooked because of their unfamiliar catalog names. The list contains 125 select objects from these catalogs and was compiled by the Astroleague.

Abbreviation	Catalog Name
None	King
None	Dolidze
None	Stock
None	Biurakan
None	Harvard
None	French
None	Tombaugh
Berk	Berkeley
Tr	Trumpler
Cr	Collinder
NGC	New General Catalogue
IC	Index Catalogue
Ru	Ruprecht
Mel	Melotte
Steph	Stephenson
DoDz	Dolidze Dzimselejsvili
M	Messier

## Open Clusters

Object	Other Name	RA (2000)	Dec (2000)	Con	Mag
Berk 58		00h 00m 12s	+60° 56.5'	Cas	9.7
Berk 59		00h 02m 10s	+67° 25.2'	Cep	-
King 13		00h 10m 10s	+61° 11.0'	Cas	-
Berk 2		00h 25m 15s	+60° 23.3'	Cas	-
King 14		00h 31m 54s	+63° 10.0'	Cas	8.5
NGC 225	Caroline's Cluster	00h 43m 36s	+61° 46.0'	Cas	7.0
King 16		00h 43m 42s	+64° 11.0'	Cas	10.3
NGC 188		00h 47m 30s	+85° 14.5'	Cep	8.1
NGC 581	M103	01h 33m 22s	+60° 39.5'	Cas	7.4
Tr 1	Cr 15	01h 35m 40s	+61° 17.2'	Cas	8.1
Cr 463		01h 45m 45s	+71° 48.6'	Cas	5.7
Stock 4		01h 52m 42s	+57° 04.0'	Per	-
Cr 26	IC 1805	02h 32m 42s	+61° 27.4'	Cas	6.5
Tr 2	Cr 29	02h 36m 53s	+55° 54.9'	Per	5.9
NGC 1027		02h 42m 36s	+61° 35.7'	Cas	6.7
DODZ 1		02h 47m 27s	+17° 15.3'	Ari	7.1
IC 1848		02h 51m 11s	+60° 24.1'	Cas	6.5
Cr 34		02h 59m 23s	+60° 34.0'	Cas	6.8
Tr 3	Cr 36	03h 12m 00s	+63° 11.0'	Cas	7.0
Stock 23	Pazmino's Cluster	03h 16m 10s	+60° 06.9'	Cam	-
NGC 1342		03h 31m 40s	+37° 22.5'	Per	6.7
IC 348		03h 44m 34s	+32° 09.8'	Per	7.3
Tombaugh 5		03h 47m 44s	+59° 05.4'	Cam	8.4
NGC 1444		03h 49m 27s	+52° 39.3'	Per	6.6
King 7		03h 59m 10s	+51° 46.8'	Per	-
NGC 1496		04h 04m 32s	+52° 39.7'	Per	9.6
NGC 1502		04h 07m 50s	+62° 19.9'	Cam	6.9
NGC 1662		04h 48m 29s	+10° 55.8'	Ori	6.4
NGC 1746		05h 03m 36s	+23° 49.0'	Tau	6.1
NGC 1807		05h 10m 46s	+16° 30.8'	Tau	7.0
NGC 1798		05h 11m 40s	+47° 41.7'	Aur	10
NGC 1893		05h 22m 46s	+33° 25.2'	Aur	7.5
NGC 1912	M38	05h 28m 43s	+35° 51.3'	Aur	6.4
DODZ 3		05h 33m 30s	+26° 31.0'	Tau	-
Cr 69	Lambda Ori Cluster	05h 35m 00s	+09° 56.0'	Ori	2.8
NGC 1981		05h 35m 12s	-04° 26.0'	Ori	4.2
DODZ 4		05h 35m 54s	+25° 57.0'	Tau	-

Object	Other Name	RA (2000)	Dec (2000)	Con	Mag
NGC 2141		06h 02m 56s	+10° 26.8'	Ori	9.4
NGC 2158		06h 07m 26s	+24° 05.8'	Gem	8.6
NGC 2169		06h 08m 25s	+13° 57.9'	Ori	5.9
NGC 2232		06h 27m 15s	-04° 45.5'	Mon	4.2
NGC 2244		06h 32m 19s	+04° 51.4'	Mon	4.8
Ru 1		06h 36m 24s	-14° 09.0'	CMa	-
Ru 3		06h 42m 06s	-29° 27.2'	CMa	-
Biurakan 9	Berk 30	06h 57m 46s	+03° 13.7'	Mon	-
Ru 7		06h 57m 50s	-13° 13.2'	CMa	-
NGC 2353		07h 14m 31s	-10° 16.0'	Mon	7.1
Tr 6	Cr 145	07h 26m 23s	-24° 12.7'	CMa	10.0
Tr 7	Cr 146	07h 27m 21s	-23° 58.0'	Pup	7.9
NGC 2422	M47	07h 36m 36s	-14° 29.0'	Pup	4.4
Mel 71	Cr 155	07h 37m 30s	-12° 03.1'	Pup	7.1
NGC 2439		07h 40m 46s	-31° 41.5'	Pup	6.9
NGC 2453		07h 47m 35s	-27° 11.7'	Pup	8.3
Tr 9	Cr 168	07h 55m 40s	-25° 53.2'	Pup	8.7
NGC 2548	M48	08h 13m 44s	-05° 45.0'	Hya	5.8
NGC 2632	M44	08h 40m 22s	+19° 40.2'	Cnc	3.1
NGC 2682	M67	08h 51m 24s	+11° 49.0'	Cnc	6.9
Dolidze 27		16h 36m 30s	-08° 56.0'	Oph	-
Tr 26	Cr 331	17h 28m 30s	-29° 29.8'	Oph	9.5
Cr 333		17h 31m 31s	-34° 00.6'	Sco	9.8
NGC 6383		17h 34m 42s	-32° 34.9'	Sco	5.5
Tr 27	Cr 336	17h 36m 13s	-33° 29.3'	Sco	6.7
Tr 28	Cr 337	17h 36m 59s	-32° 28.4'	Sco	7.7
NGC 6416		17h 44m 18s	-32° 21.0'	Sco	5.7
Cr 347		17h 46m 19s	-29° 20.1'	Sgr	8.8
IC 4665		17h 46m 12s	+05° 43.0'	Oph	4.2
NGC 6475	M7	17h 53m 46s	-34° 47.1'	Sco	3.3
NGC 6520		18h 03m 25s	-27° 53.5'	Sgr	7.6
NGC 6530	NGC 6523	18h 04m 25s	-24° 23.2'	Sgr	4.6
DODZ 9		18h 08m 48s	+31° 32.0'	Her	-
Tr 32		18h 17m 10s	-13° 20.6'	Ser	12.2
NGC 6604		18h 18m 06s	-12° 13.0'	Ser	6.5
Tr 33	Cr 378	18h 24m 39s	-19° 43.9'	Sgr	7.8
NGC 6649		18h 33m 28s	-10° 24.1'	Sct	8.9
Tr 35	Cr 388	18h 43m 00s	-04° 13.5'	Sct	9.2
NGC 6694	M26	18h 45m 15s	-09° 23.1'	Sct	8.0

Object	Other Name	RA (2000)	Dec (2000)	Con	Mag
NGC 6705	M11	18h 51m 04s	-06° 16.2'	Sct	5.8
NGC 6709		18h 51m 30s	+10° 20.0'	Aql	6.7
Ru 146		18h 52m 30s	-21° 04.9'	Sgr	-
Berk 80		18h 54m 21s	-01° 13.2'	Aql	-
Steph 1		18h 54m 31s	+36° 54.0'	Lyr	3.8
NGC 6716		18h 54m 34s	-19° 54.5'	Sgr	7.5
Berk 82		19h 11m 20s	+13° 06.7'	Aql	-
NGC 6774		19h 16m 18s	-16° 19.5'	Sgr	-
NGC 6791		19h 20m 53s	+37° 46.4'	Lyr	9.5
NGC 6793		19h 23m 13s	+22° 09.4'	Vul	-
King 25		19h 24m 30s	+13° 42.0'	Aql	-
NGC 6800		19h 27m 00s	+25° 05.6'	Vul	-
Berk 47		19h 28m 27s	+17° 21.9'	Sge	-
NGC 6811		19h 37m 10s	+46° 22.5'	Cyg	6.8
Cr 401		19h 38m 22s	+00° 20.7'	Aql	7.0
NGC 6819		19h 41m 18s	+40° 11.0'	Cyg	7.3
NGC 6823		19h 43m 10s	+23° 18.0'	Vul	7.1
Harvard 20		19h 53m 10s	+18° 21.4'	Sge	7.7
NGC 6871		20h 06m 27s	+35° 47.4'	Cyg	5.2
Biurakan 2		20h 09m 14s	+35° 29.0'	Cyg	6.3
NGC 6885	NGC 6882	20h 12m 01s	+26° 28.7'	Vul	-
IC 4996		20h 16m 32s	+37° 38.6'	Cyg	7.3
Berk 85		20h 18m 47s	+37° 45.3'	Cyg	-
Berk 86		20h 20m 21s	+38° 42.0'	Cyg	7.9
Berk 87		20h 21m 35s	+37° 23.5'	Cyg	-
NGC 6910		20h 23m 12s	+40° 46.7'	Cyg	7.4
Cr 421		20h 23m 18s	+41° 42.0'	Cyg	10.1
Dolidze 9		20h 25m 33s	+41° 54.4'	Cyg	-
Berk 90		20h 35m 16s	+46° 50.7'	Cyg	-
French 1		21h 07m 22s	+16° 17.9'	Del	-
IC 1369		21h 12m 07s	+47° 46.0'	Cyg	8.8
Berk 55		21h 16m 57s	+51° 45.5'	Cyg	-
NGC 7063		21h 24m 30s	+36° 30.0'	Cyg	7.0
IC 1396		21h 39m 00s	+57° 30.0'	Cep	3.5
NGC 7142		21h 45m 09s	+65° 46.5'	Cep	9.3
NGC 7209		22h 05m 08s	+46° 29.0'	Lac	7.7
IC 1434		22h 10m 30s	+52° 50.0'	Lac	9.0
NGC 7235		22h 12m 24s	+57° 16.4'	Cep	7.7
King 9		22h 15m 31s	+54° 24.6'	Lac	-

Object	Other Name	RA (2000)	Dec (2000)	Con	Mag
Berk 94		22h 22m 53s	+55° 52.5'	Cep	8.7
Berk 96		22h 29m 51s	+55° 24.4'	Lac	-
King 18		22h 52m 08s	+58° 18.7'	Cep	-
NGC 7423		22h 55m 06s	+57° 05.7'	Cep	-
King 10		22h 55m 00s	+59° 10.0'	Cep	-
King 19		23h 08m 18s	+60° 31.0'	Cep	9.2
NGC 7510		23h 11m 04s	+60° 34.1'	Cep	7.9
NGC 7686		23h 30m 07s	+49° 08.0'	And	5.6
King 21		23h 49m 54s	+62° 42.0'	Cas	9.6
King 12		23h 53m 00s	+61° 57.0'	Cas	9.0

## Open Cluster Observing Log (1)

Object	Date	Object	Date
Berk 58		NGC 1912	
Berk 59		DODZ 3	
King 13		Cr 69	
Berk 2		NGC 1981	
King 14		DODZ 4	
NGC 225		NGC 2141	
King 16		NGC 2158	
NGC 188		NGC 2169	
NGC 581		NGC 2232	
Tr 1		NGC 2244	
Cr 463		Ru 1	
Stock 4		Ru 3	
Cr 26		Biurakan 9	
Tr 2		Ru 7	
NGC 1027		NGC 2353	
DODZ 1		Tr 6	
IC 1848		Tr 7	
Cr 34		NGC 2422	
Tr 3		Mel 71	
Stock 23		NGC 2439	
NGC 1342		NGC 2453	
IC 348		Tr 9	
Tombaugh 5		NGC 2548	
NGC 1444		NGC 2632	
King 7		NGC 2682	
NGC 1496		Dolidze 27	
NGC 1502		Tr 26	
NGC 1662		Cr 333	
NGC 1746		NGC 6383	
NGC 1807		Tr 27	
NGC 1798		Tr 28	
NGC 1893		NGC 6416	

## Open Cluster Observing Log (2)

Object	Date	Object	Date
Cr 347		Biurakan 2	
IC 4665		NGC 6885	
NGC 6475		IC 4996	
NGC 6520		Berk 85	
NGC 6530		Berk 86	
DODZ 9		Berk 87	
Tr 32		NGC 6910	
NGC 6604		Cr 421	
Tr 33		Dolidze 9	
NGC 6649		Berk 90	
Tr 35		French 1	
NGC 6694		IC 1369	
NGC 6705		Berk 55	
NGC 6709		NGC 7063	
Ru 146		IC 1396	
Berk 80		NGC 7142	
Steph 1		NGC 7209	
NGC 6716		IC 1434	
Berk 82		NGC 7235	
NGC 6774		King 9	
NGC 6791		Berk 94	
NGC 6793		Berk 96	
King 25		King 18	
NGC 6800		NGC 7423	
Berk 47		King 10	
NGC 6811		King 19	
Cr 401		NGC 7510	
NGC 6819		NGC 7686	
NGC 6823		King 21	
Harvard 20		King 12	
NGC 6871			