

Herschel 400

For many years, Amateur Astronomers have enjoyed the challenge and excitement provided by the Messier list of deep-sky objects. The 110 or so objects in the Messier Catalog introduced the observer to the importance of careful observing and record keeping. Upon completion of this project, however, the amateur was left somewhat in a void. He or she wanted to further the quest for deep-sky objects, but outside of the vast *New General Catalog*, there was no organized program that would provide that next vital step upward. With this idea in mind, the formation of the Herschel I list began.

The William Herschel Catalog of deep-sky objects could be found in the original *New General Catalog* by Johann Dreyer. The *New General Catalog* was a compilation of several deep-sky catalogs circa 1880; it contained almost 8,000 objects, 2,477 of these objects were observed by William Herschel. The Ancient City Astronomy Club (ACAC) members separated his objects, which used a rather unique classification system with eight sub-categories. These subcategories are:

- Class I - Bright Nebulae;
- Class II - Faint Nebulae;
- Class III - Very Faint Nebulae;
- Class IV - Planetary Nebulae;
- Class V - Very Large Nebulae;
- Class VI - Very Compressed and Rich Clusters of Stars;
- Class VII - Compressed Clusters of Small and Large Stars;
- Class VIII - Coarsely Scattered Clusters of Stars.

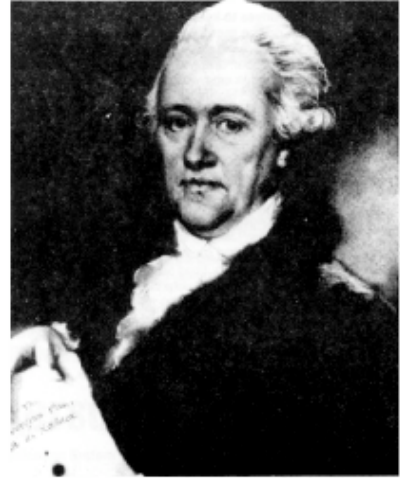


Photo Courtesy of Yerkes Observatory

Friedrich Wilhelm Herschel

It was soon discovered that a vast majority of Herschel's objects were in Class II and III and, with magnitudes fainter than thirteen, were beyond the reach of many amateur telescopes. The ACAC decided the proposed Herschel 400 List would consist of enough objects to present a distinct challenge, yet still be within range of amateurs who possessed only modest equipment and were affected by moderate light-pollution problems. 400 objects were set as the best number of objects.

All the objects can be seen in a six-inch or larger telescope. You will notice a few Messier objects in the listings, also the Double Cluster, along with most of the brighter deep-sky objects that did not find their way into Messier's Catalog. However, beyond these few bright ones, the rest of the Herschel I objects are faint and inconspicuous. The Virgo galaxy field along with the Milky Way will present the toughest challenges.

Herschel 400 List

pn: planetary nebula sg: spiral galaxy ig: irregular galaxy
 bn: bright nebula eg: elliptical galaxy oc: open cluster
 sr: supernova remnant gc: globular cluster

NGC	Type	Mag	RA	Dec	Con
40	pn	10.2	00h 10.2m	72° 15'	Cep
129	oc	10.0	00h 27.0m	59° 57'	Cas
136	oc	11.3	00h 28.7m	61° 15'	Cas
157	sg	11.2	00h 32.3m	-08° 40'	Cet
185	eg	11.7	00h 36.1m	48° 04'	Cas
205	eg	9.4	00h 37.6m	41° 25'	And
225	oc	9.1	00h 40.5m	61° 31'	Cas
246	pn	8.5	00h 44.6m	-12° 09'	Cet
247	sg	11.0	00h 44.6m	-21° 01'	Cet
253	sg	8.9	00h 45.1m	-25° 34'	Scl
278	eg	11.3	00h 49.2m	47° 18'	Cas
288	gc	7.2	00h 50.2m	-26° 52'	Scl
381	oc	9.2	01h 05.2m	61° 18'	Cas
404	eg	10.7	01h 06.6m	35° 27'	And
436	oc	8.8	01h 12.4m	50° 33'	Cas
457	oc	7.5	01h 15.9m	58° 04'	Cas
488	sg	11.1	01h 19.1m	05° 00'	Psc
524	eg	11.1	01h 22.1m	09° 16'	Psc
559	oc	7.5	01h 26.1m	63° 02'	Cas
584	eg	10.8	01h 28.8m	-07° 07'	Cet
596	eg	11.5	01h 30.3m	-07° 17'	Cet
598	sg	6.7	01h 31.1m	30° 24'	Tri
613	sg	10.2	01h 32.0m	-29° 40'	Scl
615	sg	11.6	01h 32.6m	-07° 35'	Cet
637	oc	7.5	01h 38.3m	63° 47'	Cas
651	pn	11.0	01h 38.8m	51° 19'	Per
654	oc	9.1	01h 40.5m	61° 39'	Cas
659	oc	9.8	01h 40.8m	60° 28'	Cas
663	oc	7.1	01h 42.6m	61° 01'	Cas
720	eg	10.5	01h 50.6m	-13° 59'	Cet
752	oc	7.0	01h 54.7m	37° 25'	And
772	sg	10.9	01h 56.6m	18° 46'	Ari
779	sg	11.3	01h 57.2m	-06° 12'	Cet
869	oc	4.4	02h 15.5m	56° 55'	Per
884	oc	4.7	02h 18.9m	56° 53'	Per
891	sg	11.5	02h 19.3m	42° 07'	And
908	sg	11.0	02h 20.8m	-21° 27'	Cet
936	sg	10.7	02h 25.1m	-01° 22'	Cet
1022	sg	11.2	02h 36.1m	-06° 53'	Cet

NGC	Type	Mag	RA	Dec	Con
1023	eg	10.5	02h 37.2m	38° 52'	Per
1027	oc	7.5	02h 38.8m	61° 20'	Cas
1052	eg	11.2	02h 38.6m	-08° 28'	Cet
1055	sg	11.5	02h 39.2m	00° 16'	Cet
1084	sg	11.0	02h 43.5m	-07° 47'	Eri
1245	oc	6.9	03h 11.2m	47° 03'	Per
1342	oc	7.1	03h 28.4m	37° 09'	Per
1407	eg	10.6	03h 37.9m	-18° 44'	Eri
1444	oc	6.4	03h 45.6m	52° 31'	Per
1501	pn	13.3	04h 02.6m	60° 47'	Cam
1502	oc	5.3	04h 03.0m	62° 11'	Cam
1513	oc	8.8	04h 06.2m	49° 23'	Per
1528	oc	6.2	04h 11.4m	51° 07'	Per
1535	pn	9.3	04h 12.1m	-12° 52'	Eri
1545	oc	8.0	04h 17.1m	50° 08'	Per
1647	oc	6.0	04h 43.2m	18° 59'	Tau
1664	oc	7.5	04h 47.4m	43° 37'	Aur
1788	bn	11.0	05h 04.5m	-04° 24'	Ori
1817	oc	7.9	05h 09.2m	16° 38'	Tau
1857	oc	8.5	05h 16.6m	39° 18'	Aur
1907	oc	9.9	05h 24.7m	35° 17'	Aur
1931	bn	9.5	05h 28.1m	34° 13'	Aur
1961	sg	11.7	05h 36.8m	69° 24'	Cam
1964	sg	11.6	05h 31.2m	-21° 59'	Lep
1980	bn		05h 33.0m	-05° 56'	Ori
1999	bn	10.0	05h 34.1m	-06° 45'	Ori
2022	pn	11.5	05h 39.3m	09° 03'	Ori
2024	bn	10.7	05h 39.4m	-01° 52'	Ori
2126	oc	10.0	05h 58.1m	49° 55'	Aur
2129	oc	7.2	05h 58.1m	23° 18'	Gem
2158	oc	11.0	06h 04.3m	24° 06'	Gem
2169	oc	6.4	06h 05.7m	13° 58'	Ori
2185	bn	11.0	06h 08.7m	-06° 12'	Mon
2186	oc	9.5	06h 09.4m	05° 27'	Ori
2194	oc	9.2	06h 11.0m	12° 50'	Ori
2204	oc	9.1	06h 13.5m	-18° 25'	CMa
2215	oc	8.6	06h 18.4m	-07° 16'	Mon
2232	oc	4.0	06h 24.1m	-04° 43'	Mon
2244	oc	6.2	06h 29.7m	04° 54'	Mon
2251	oc	8.5	06h 32.0m	08° 24'	Mon
2264	bn	4.7	06h 38.4m	09° 56'	Mon
2266	oc	9.8	06h 40.5m	27° 02'	Gem
2281	oc	6.9	06h 45.8m	41° 07'	Aur
2286	oc	8.0	06h 45.1m	-03° 07'	Mon
2301	oc	5.8	06h 49.2m	00° 31'	Mon

NGC	Type	Mag	RA	Dec	Con
2304	oc	10.1	06h 52.3m	18° 05'	Gem
2311	oc	9.6	06h 52.8m	-04° 31'	Mon
2324	oc	8.8	07h 00.4m	01° 08'	Mon
2335	oc	9.1	07h 04.2m	-10° 00'	Mon
2343	oc	8.0	07h 05.9m	-10° 34'	Mon
2353	oc	5.3	07h 12.3m	-10° 12'	Mon
2354	oc	9.0	07h 12.2m	-25° 38'	CMa
2355	oc	9.5	07h 14.2m	13° 52'	Gem
2360	oc	9.4	07h 15.4m	-15° 33'	CMa
2362	oc	10.5	07h 16.6m	-24° 52'	CMa
2371	pn	11.0	07h 22.4m	29° 35'	Gem
2372	pn	11.0	07h 22.4m	29° 35'	Gem
2392	pn	9.5	07h 26.2m	21° 01'	Gem
2395	oc	9.4	07h 24.3m	13° 41'	Gem
2403	sg	8.9	07h 32.0m	65° 43'	Cam
2419	gc	11.5	07h 34.8m	39° 00'	Lyn
2420	oc	10.2	07h 35.4m	21° 41'	Gem
2421	oc	9.4	07h 34.1m	-20° 30'	Pup
2422	oc	4.5	07h 34.3m	-14° 22'	Pup
2423	oc	6.9	07h 34.8m	-13° 45'	Pup
2438	pn	11.3	07h 39.6m	-14° 36'	Pup
2440	pn	11.5	07h 39.9m	-18° 05'	Pup
2479	oc	9.5	07h 54.7m	-17° 35'	Pup
2482	oc	8.7	07h 52.8m	-24° 10'	Pup
2489	oc	9.4	07h 56.2m	-29° 56'	Pup
2506	oc	8.5	07h 57.7m	-10° 29'	Mon
2509	oc	9.3	07h 58.5m	-18° 56'	Pup
2527	oc	8.0	08h 03.2m	-28° 01'	Pup
2539	oc	8.2	08h 08.4m	-12° 41'	Pup
2548	oc	5.3	08h 11.2m	-05° 38'	Hya
2567	oc	8.3	08h 16.6m	-30° 29'	Pup
2571	oc	7.5	08h 16.9m	-29° 35'	Pup
2613	sg	11.0	08h 31.1m	-22° 48'	Pyx
2627	oc	8.3	08h 35.2m	-29° 46'	Pyx
2655	sg	10.7	08h 49.4m	78° 25'	Cam
2681	sg	10.4	08h 50.0m	51° 31'	UMa
2683	sg	9.6	08h 49.6m	33° 38'	Lyn
2742	sg	11.2	09h 03.7m	60° 41'	UMa
2768	eg	10.5	09h 07.8m	60° 16'	UMa
2775	sg	10.7	09h 07.7m	07° 15'	Cnc
2782	sg	11.7	09h 10.9m	40° 19'	Lyn
2787	sg	10.9	09h 14.9m	69° 25'	UMa
2811	sg	11.7	09h 13.9m	-16° 06'	Hya
2841	sg	9.3	09h 18.6m	51° 12'	UMa
2859	sg	10.7	09h 21.3m	34° 44'	LMi
2903	sg	9.1	09h 29.3m	21° 44'	Leo

NGC	Type	Mag	RA	Dec	Con
2950	sg	10.9	09h 39.1m	59° 05'	UMa
2964	sg	11.0	09h 40.0m	32° 05'	Leo
2974	sg	11.0	09h 40.0m	-03° 29'	Sex
2976	sg	11.4	09h 43.2m	68° 08'	UMa
2985	sg	10.6	09h 46.0m	72° 31'	UMa
3034	ig	8.8	09h 51.9m	69° 56'	UMa
3077	eg	10.9	09h 59.4m	68° 58'	UMa
3079	sg	11.2	09h 58.6m	55° 57'	UMa
3115	eg	9.3	10h 02.8m	-07° 28'	Sex
3147	sg	10.9	10h 12.8m	73° 39'	Dra
3166	sg	11.4	10h 11.2m	03° 40'	Sex
3169	sg	11.7	10h 11.7m	03° 43'	Sex
3184	sg	9.6	10h 15.2m	41° 40'	UMa
3190	sg	11.3	10h 15.4m	22° 05'	Leo
3193	eg	11.5	10h 15.7m	22° 09'	Leo
3198	sg	11.0	10h 16.7m	45° 49'	UMa
3226	eg	11.5	10h 20.7m	20° 09'	Leo
3227	sg	11.4	10h 20.7m	20° 07'	Leo
3242	pn	9.0	10h 22.4m	-18° 23'	Hya
3245	eg	11.2	10h 24.5m	28° 46'	LMi
3277	sg	12.0	10h 30.2m	28° 46'	LMi
3294	sg	11.4	10h 33.4m	37° 35'	LMi
3310	ig	10.1	10h 35.7m	53° 46'	UMa
3344	sg	11.0	10h 40.7m	25° 11'	LMi
3377	eg	10.5	10h 45.1m	14° 15'	Leo
3379	eg	9.5	10h 45.2m	12° 51'	Leo
3384	eg	10.2	10h 45.7m	12° 54'	Leo
3395	sg	12.0	10h 47.1m	33° 15'	Leo
3412	eg	10.4	10h 48.3m	13° 41'	Leo
3414	sg	11.0	10h 48.6m	28° 15'	LMi
3432	sg	11.4	10h 49.7m	36° 54'	LMi
3486	sg	11.0	10h 57.8m	29° 15'	LMi
3489	eg	11.5	10h 57.7m	14° 10'	Leo
3504	sg	10.9	11h 00.5m	28° 15'	LMi
3521	sg	10.5	11h 03.2m	00° 14'	Leo
3556	sg	11.0	11h 08.7m	55° 57'	UMa
3593	sg	11.3	11h 12.0m	13° 06'	Leo
3607	eg	9.6	11h 14.3m	18° 20'	Leo
3608	eg	11.1	11h 14.4m	18° 26'	Leo
3610	eg	11.2	11h 15.6m	59° 04'	UMa
3613	eg	11.2	11h 15.7m	58° 17'	UMa
3619	sg	11.7	11h 16.5m	58° 02'	UMa
3621	sg	10.5	11h 15.9m	-32° 32'	Hya
3626	sg	10.5	11h 17.5m	18° 38'	Leo
3628	sg	10.9	11h 17.7m	13° 53'	Leo
3631	sg	11.2	11h 18.3m	53° 28'	UMa

NGC	Type	Mag	RA	Dec	Con
3640	eg	10.7	11h 18.5m	03° 31'	Leo
3655	sg	11.3	11h 20.3m	16° 51'	Leo
3665	eg	11.4	11h 22.1m	39° 02'	UMa
3675	sg	11.5	11h 23.5m	43° 52'	UMa
3686	sg	11.4	11h 25.1m	17° 30'	Leo
3726	sg	10.8	11h 30.7m	47° 19'	UMa
3729	ig	11.7	11h 31.0m	53° 24'	UMa
3810	sg	10.8	11h 38.4m	11° 45'	Leo
3813	sg	11.7	11h 38.7m	36° 49'	UMa
3877	sg	10.9	11h 43.5m	47° 46'	UMa
3893	sg	11.3	11h 46.1m	49° 00'	UMa
3898	sg	11.5	11h 46.7m	56° 22'	UMa
3900	sg	11.5	11h 46.6m	27° 17'	Leo
3912	sg	11.5	11h 47.5m	26° 46'	Leo
3938	sg	11.5	11h 50.2m	44° 24'	UMa
3941	sg	9.8	11h 50.3m	37° 16'	UMa
3945	sg	10.8	11h 50.6m	60° 57'	UMa
3949	sg	11.0	11h 51.1m	48° 08'	UMa
3953	sg	10.7	11h 51.2m	52° 37'	UMa
3962	eg	11.3	11h 52.2m	-13° 42'	Crt
3982	sg	11.3	11h 53.9m	55° 24'	UMa
3992	sg	10.8	11h 55.0m	53° 39'	UMa
3998	eg	11.3	11h 55.3m	55° 44'	UMa
4026	eg	10.7	11h 56.9m	51° 14'	UMa
4027	sg	11.5	11h 57.0m	-18° 59'	Crv
4030	sg	11.0	11h 57.8m	-00° 49'	Vir
4036	eg	10.7	11h 58.9m	62° 10'	UMa
4038	sg	11.5	11h 59.3m	-18° 35'	Crv
4041	sg	11.0	11h 59.7m	62° 25'	UMa
4051	sg	11.0	12h 00.6m	44° 48'	UMa
4085	sg	11.8	12h 02.8m	50° 38'	UMa
4088	sg	10.9	12h 03.0m	50° 49'	UMa
4102	sg	11.8	12h 03.8m	52° 59'	UMa
4111	eg	9.7	12h 04.5m	43° 21'	UMa
4143	eg	11.0	12h 07.1m	42° 49'	CVn
4147	gc	9.4	12h 07.6m	18° 49'	Com
4150	eg	11.6	12h 08.0m	30° 41'	Com
4151	ig	11.6	12h 08.0m	39° 41'	CVn
4179	eg	11.6	12h 10.3m	01° 35'	Vir
4203	eg	11.0	12h 12.5m	33° 29'	Com
4214	ig	10.3	12h 30.1m	36° 36'	CVn
4216	sg	10.4	12h 13.4m	13° 25'	Vir
4245	sg	11.1	12h 15.2m	29° 53'	Com
4251	sg	10.2	12h 15.7m	28° 27'	Com
4258	sg	8.6	12h 16.5m	47° 35'	CVn
4261	eg	10.3	12h 16.8m	06° 06'	Vir

NGC	Type	Mag	RA	Dec	Con
4273	sg	11.6	12h 17.4m	05° 37'	Vir
4274	sg	10.8	12h 17.4m	29° 53'	Com
4278	eg	10.3	12h 17.7m	29° 34'	Com
4281	eg	11.3	12h 17.8m	05° 40'	Vir
4293	ig	11.5	12h 18.7m	18° 40'	Com
4303	sg	10.1	12h 19.4m	04° 45'	Vir
4314	sg	10.8	12h 20.0m	30° 10'	Com
4346	eg	11.6	12h 21.0m	47° 16'	CVn
4350	eg	11.0	12h 21.4m	16° 58'	Com
4361	pn	10.8	12h 21.9m	-18° 29'	Crv
4365	eg	11.1	12h 22.0m	07° 36'	Vir
4371	sg	11.6	12h 22.4m	11° 59'	Vir
4394	sg	11.2	12h 23.4m	18° 29'	Com
4414	sg	9.7	12h 24.0m	31° 30'	Com
4419	eg	11.4	12h 24.4m	15° 19'	Com
4429	sg	11.2	12h 24.9m	11° 23'	Vir
4435	eg	10.3	12h 25.2m	13° 21'	Vir
4438	sg	10.8	12h 25.3m	13° 17'	Vir
4442	eg	10.8	12h 25.6m	10° 05'	Vir
4448	sg	11.4	12h 25.8m	28° 54'	Com
4449	ig	9.2	12h 25.8m	44° 22'	Vir
4450	sg	10.0	12h 25.9m	17° 21'	Com
4459	eg	10.9	12h 26.5m	14° 15'	Com
4473	eg	10.1	12h 27.3m	13° 42'	Vir
4477	sg	10.7	12h 27.6m	13° 55'	Vir
4478	eg	10.9	12h 27.8m	12° 36'	Vir
4485	ir	11.6	12h 28.2m	41° 58'	CVn
4490	sg	9.7	12h 28.3m	41° 55'	CVn
4494	eg	9.6	12h 28.9m	26° 03'	Com
4526	eg	10.9	12h 31.6m	07° 58'	Vir
4527	sg	11.5	12h 31.6m	02° 56'	Vir
4535	sg	11.0	12h 31.8m	08° 28'	Vir
4536	sg	10.9	12h 31.9m	02° 28'	Vir
4546	eg	10.0	12h 32.9m	-03° 31'	Vir
4548	sg	10.8	12h 32.9m	14° 46'	Com
4550	eg	11.7	12h 32.9m	12° 30'	Vir
4559	sg	10.6	12h 33.5m	28° 14'	Com
4565	sg	10.2	12h 33.9m	26° 16'	Com
4570	eg	10.9	12h 34.4m	07° 31'	Vir
4594	sg	8.7	12h 37.3m	-11° 21'	Vir
4596	sg	11.4	12h 37.4m	10° 27'	Vir
4618	sg	11.7	12h 39.2m	41° 25'	CVn
4631	sg	9.3	12h 39.8m	32° 49'	CVn
4636	eg	10.4	12h 40.3m	02° 57'	Vir
4643	sg	10.6	12h 40.8m	02° 15'	Vir
4654	sg	11.0	12h 41.4m	13° 23'	Vir

NGC	Type	Mag	RA	Dec	Con
4656	ig	11.2	12h 41.6m	32° 26'	CVn
4660	eg	10.9	12h 42.0m	11° 26'	Vir
4665	sg	11.1	12h 42.6m	03° 19'	Vir
4666	sg	11.4	12h 42.6m	-00° 12'	Vir
4689	sg	11.5	12h 45.2m	14° 01'	Com
4697	eg	10.5	12h 46.0m	-05° 32'	Vir
4698	sg	11.3	12h 45.8m	08° 45'	Vir
4699	sg	9.3	12h 46.5m	-08° 24'	Vir
4725	sg	8.9	12h 48.1m	25° 46'	Com
4753	sg	10.8	12h 49.8m	-00° 55'	Vir
4754	eg	10.5	12h 49.7m	11° 35'	Vir
4762	sg	11.0	12h 50.4m	11° 31'	Vir
4781	sg	11.2	12h 51.8m	-10° 16'	Vir
4800	sg	11.1	12h 52.4m	46° 48'	CVn
4845	sg	11.5	12h 55.5m	01° 51'	Vir
4856	eg	11.5	12h 56.7m	-14° 46'	Vir
4866	sg	11.4	12h 57.0m	14° 27'	Vir
4900	sg	11.3	12h 58.2m	02° 46'	Vir
4958	eg	10.9	13h 03.1m	-07° 45'	Vir
4995	sg	11.2	13h 07.0m	-07° 34'	Vir
5005	sg	9.8	13h 08.5m	37° 19'	CVn
5033	sg	10.3	13h 11.2m	36° 51'	CVn
5054	sg	11.5	13h 14.3m	-16° 23'	Vir
5195	ig	8.4	13h 27.9m	47° 31'	CVn
5248	sg	11.3	13h 35.1m	09° 08'	Boo
5273	eg	11.5	13h 39.9m	35° 55'	CVn
5322	eg	10.0	13h 47.6m	60° 26'	UMa
5363	eg	10.7	13h 53.6m	05° 29'	Vir
5364	sg	11.0	13h 53.7m	05° 15'	Vir
5466	gc	8.5	14h 03.2m	28° 46'	Boo
5473	eg	11.4	14h 03.0m	55° 08'	UMa
5474	sg	11.4	14h 03.2m	53° 54'	UMa
5557	eg	11.6	14h 16.4m	36° 43'	Boo
5566	sg	10.4	14h 17.8m	04° 11'	Vir
5576	eg	11.7	14h 18.5m	03° 30'	Vir
5631	sg	11.4	14h 25.1m	56° 48'	UMa
5634	gc	10.4	14h 27.0m	-05° 45'	Vir
5676	sg	11.2	14h 31.0m	49° 41'	Boo
5689	sg	11.4	14h 33.7m	48° 57'	Boo
5694	gc	11.0	14h 36.7m	-26° 19'	Hya
5746	sg	10.1	14h 42.3m	02° 10'	Vir
5846	eg	10.5	15h 04.0m	01° 48'	Vir
5866	eg	10.8	15h 05.1m	55° 57'	Dra
5897	gc	11.0	15h 14.5m	-20° 50'	Lib
5907	sg	11.3	15h 14.6m	56° 31'	Dra
5982	eg	10.9	15h 37.6m	59° 32'	Dra

NGC	Type	Mag	RA	Dec	Con
6118	sg	11.5	16h 19.3m	-02° 11'	Ser
6144	gc	10.5	16h 24.2m	-25° 56'	Sco
6171	gc	9.2	16h 29.7m	-12° 57'	Oph
6207	sg	11.3	16h 41.3m	36° 56'	Her
6217	sg	11.5	16h 34.8m	78° 18'	UMi
6229	gc	8.7	16h 45.6m	47° 37'	Her
6235	gc	10.4	16h 50.4m	-22° 05'	Oph
6284	gc	10.5	17h 01.5m	-24° 41'	Oph
6287	gc	9.9	17h 02.1m	-22° 38'	Oph
6293	gc	9.5	17h 07.1m	-26° 30'	Oph
6304	gc	9.8	17h 11.4m	-29° 24'	Oph
6316	gc	10.0	17h 13.4m	-28° 05'	Oph
6342	gc	10.0	17h 18.2m	-19° 32'	Oph
6355	gc	10.5	17h 20.1m	-26° 19'	Oph
6356	gc	9.5	17h 20.7m	-17° 46'	Oph
6369	pn	9.9	17h 26.3m	-23° 44'	Oph
6401	gc	11.0	17h 35.6m	-23° 53'	Oph
6426	gc	11.5	17h 42.4m	03° 12'	Oph
6440	gc	10.4	17h 45.9m	-20° 21'	Sgr
6445	pn	11.0	17h 46.3m	-20° 00'	Sgr
6451	oc	8.5	17h 47.4m	-30° 11'	Sco
6543	pn	8.8	17h 58.8m	66° 38'	Dra
6514	oc	6.9	17h 58.9m	-23° 02'	Sgr
6517	gc	10.5	17h 59.1m	-08° 57'	Oph
6520	oc	8.1	18h 00.3m	-27° 54'	Sgr
6522	gc	9.5	18h 00.4m	-30° 02'	Sgr
6528	gc	10.5	18h 01.6m	-30° 04'	Sgr
6540	oc	11.0	18h 03.1m	-27° 50'	Sgr
6544	gc	10.0	18h 04.3m	-25° 01'	Sgr
6553	gc	10.0	18h 06.3m	-25° 56'	Sgr
6568	oc	8.5	18h 10.1m	-21° 36'	Sgr
6569	gc	10.4	18h 10.4m	-31° 50'	Sgr
6583	oc	11.5	18h 12.8m	-22° 09'	Sgr
6624	gc	9.5	18h 20.5m	-30° 23'	Sgr
6629	pn	10.6	18h 22.7m	-23° 14'	Sgr
6633	oc	5.5	18h 25.1m	06° 32'	Oph
6638	gc	10.2	18h 27.9m	-25° 32'	Sgr
6642	gc	10.5	18h 28.8m	-23° 31'	Sgr
6645	oc	8.5	18h 29.8m	-16° 56'	Sgr
6664	oc	8.9	18h 34.0m	-08° 16'	Sct
6712	gc	10.0	18h 50.3m	-08° 47'	Sct
6755	oc	9.0	19h 05.3m	04° 09'	Aql
6756	oc	10.7	19h 06.2m	04° 35'	Aql
6781	pn	11.0	19h 16.0m	06° 26'	Aql
6802	oc	11.0	19h 28.4m	20° 10'	Vul
6818	pn	10.0	19h 41.1m	-14° 17'	Sgr

NGC	Type	Mag	RA	Dec	Con
6823	oc	9.8	19h 41.1m	23° 12'	Vul
6826	pn	8.8	19h 43.4m	50° 24'	Cyg
6830	oc	9.0	19h 48.9m	22° 58'	Vul
6834	oc	10.3	19h 50.2m	29° 17'	Cyg
6866	oc	9.0	20h 02.1m	43° 51'	Cyg
6882	oc	5.5	20h 09.6m	26° 24'	Vul
6885	oc	9.1	20h 09.9m	26° 20'	Vul
6905	pn	12.0	20h 20.2m	19° 57'	Del
6910	oc	7.5	20h 21.3m	40° 37'	Cyg
6934	gc	10.0	20h 31.7m	07° 14'	Del
6939	oc	10.0	20h 30.4m	60° 28'	Cep
6940	oc	6.5	20h 32.5m	28° 08'	Vul
6946	sg	10.5	20h 33.9m	59° 58'	Cep
7000	bn		20h 57.0m	44° 08'	Cyg
7006	gc	10.3	20h 59.1m	16° 00'	Del
7008	pn	13.5	20h 59.1m	54° 21'	Cyg
7009	pn	8.4	21h 01.4m	-11° 34'	Aqr
7044	oc	11.3	21h 11.1m	42° 17'	Cyg
7062	oc	11.6	21h 21.5m	46° 10'	Cyg
7086	oc	9.4	21h 29.8m	51° 22'	Cyg
7128	oc	11.2	21h 42.4m	53° 29'	Cyg
7142	oc	10.4	21h 44.7m	65° 34'	Cep
7160	oc	6.6	21h 52.3m	62° 22'	Cep
7209	oc	7.6	22h 03.2m	46° 15'	Lac
7217	sg	11.0	22h 05.6m	31° 07'	Peg
7243	oc	7.6	22h 13.2m	49° 38'	Lac
7296	oc	9.4	22h 26.2m	-52° 02'	Lac
7331	sg	9.7	22h 34.8m	34° 10'	Peg
7380	oc	8.8	22h 44.9m	57° 49'	Cep
7448	sg	11.2	22h 57.6m	15° 43'	Peg
7479	sg	11.6	23h 02.4m	12° 03'	Peg
7510	oc	8.8	23h 09.2m	60° 18'	Cep
7606	sg	11.5	23h 16.5m	-08° 46'	Aqr
7662	pn	9.0	23h 23.5m	42° 14'	And
7686	oc	8.0	23h 27.8m	48° 51'	And
7723	sg	11.1	23h 36.4m	-13° 14'	Aqr
7727	sg	10.7	23h 37.3m	-12° 34'	Aqr
7789	oc	9.6	23h 54.5m	56° 26'	Cas
7790	oc	7.1	23h 54.5m	60° 56'	Cas
7814	Sg	10.6	00h 03.2m	16° 09'	Peg

Herschel 400 Observing Log (A)

NGC	Date	NGC	Date	NGC	Date
40		884		2129	
129		891		2158	
136		908		2169	
157		936		2185	
185		1022		2186	
205		1023		2194	
225		1027		2204	
246		1052		2215	
247		1055		2232	
253		1084		2244	
278		1245		2251	
288		1342		2264	
381		1407		2266	
404		1444		2281	
436		1501		2286	
457		1502		2301	
488		1513		2304	
524		1528		2311	
559		1535		2324	
584		1545		2335	
596		1647		2343	
598		1664		2353	
613		1788		2354	
615		1817		2355	
637		1857		2360	
651		1907		2362	
654		1931		2371	
659		1961		2372	
663		1964		2392	
720		1980		2395	
752		1999		2403	
772		2022		2419	
779		2024			
869		2126			

Herschel 400 Observing Log (B)

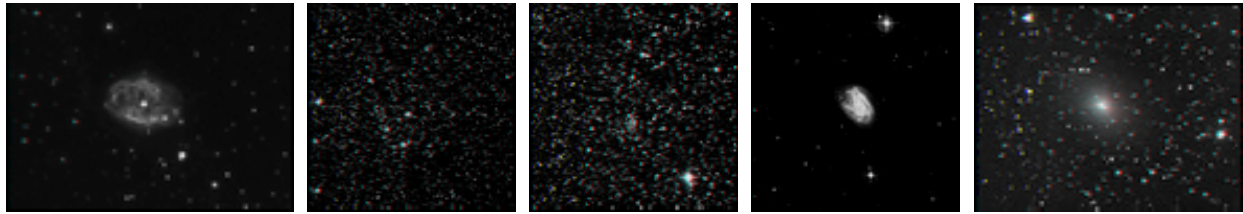
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2438		3115		3621	
2440		3147		3626	
2479		3166		3628	
2482		3169		3631	
2489		3184		3640	
2506		3190		3655	
2509		3193		3665	
2527		3198		3675	
2539		3226		3686	
2548		3227		3726	
2567		3242		3729	
2571		3245		3810	
2613		3277		3813	
2627		3294		3877	
2655		3310		3893	
2681		3344		3898	
2683		3377		3900	
2742		3379		3912	
2768		3384		3938	
2775		3395		3941	
2782		3412		3945	
2787		3414		3949	
2811		3432		3953	
2841		3486		3962	
2859		3489		3982	
2903		3504		3992	
2950		3521		3998	
2964		3556		4026	
2974		3593			
2976		3607			

Herschel 400 Observing Log (C)

NGC	Date	NGC	Date	NGC	Date
4027		4394		4656	
4030		4414		4660	
4036		4419		4665	
4038		4429		4666	
4041		4435		4689	
4051		4438		4697	
4085		4442		4698	
4088		4448		4699	
4102		4449		4725	
4111		4450		4753	
4143		4459		4754	
4147		4473		4762	
4150		4477		4781	
4151		4478		4800	
4179		4485		4845	
4203		4490		4856	
4214		4494		4866	
4216		4526		4900	
4245		4527		4958	
4251		4535		4995	
4258		4536		5005	
4261		4546		5033	
4273		4548		5054	
4274		4550		5195	
4278		4559		5248	
4281		4565		5273	
4293		4570		5322	
4303		4594		5363	
4314		4596		5364	
4346		4618		5466	
4350		4631		5473	
4361		4636		5474	
4365		4643			
4371		4654			

Herschel 400 Observing Log (D)

NGC	Date	NGC	Date	NGC	Date
5557		6451		6910	
5566		6514		6934	
5576		6517		6939	
5631		6520		6940	
5634		6522		6946	
5676		6528		7000	
5689		6540		7006	
5694		6543		7008	
5746		6544		7009	
5846		6553		7044	
5866		6568		7062	
5897		6569		7086	
5907		6583		7128	
5982		6624		7142	
6118		6629		7160	
6144		6633		7209	
6171		6638		7217	
6207		6642		7243	
6217		6645		7296	
6229		6664		7331	
6235		6712		7380	
6284		6755		7448	
6287		6756		7479	
6293		6781		7510	
6304		6802		7606	
6316		6818		7662	
6342		6823		7686	
6355		6826		7723	
6356		6830		7727	
6369		6834		7789	
6401		6866		7790	
6426		6882		7814	
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6445		6905			



N40

N129

N136

N157

N185



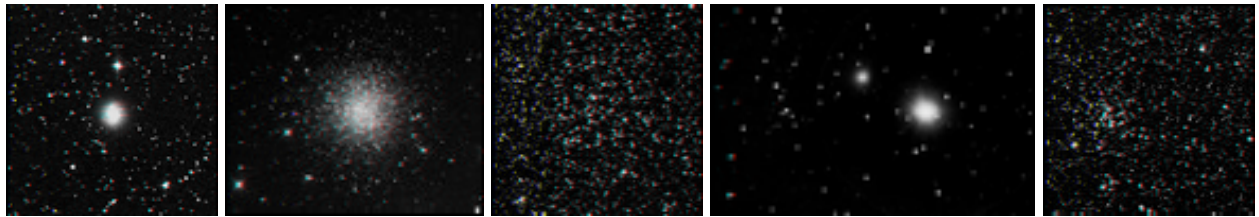
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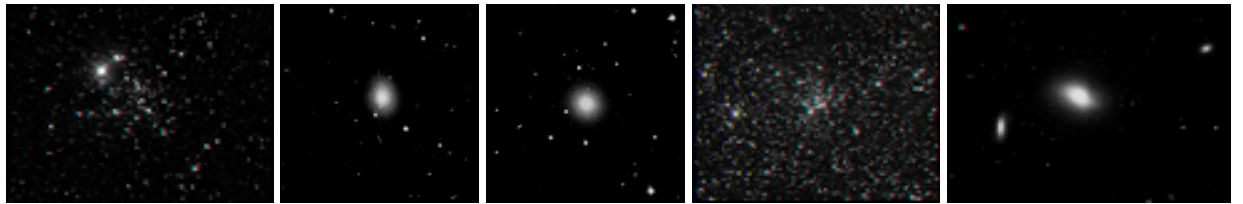
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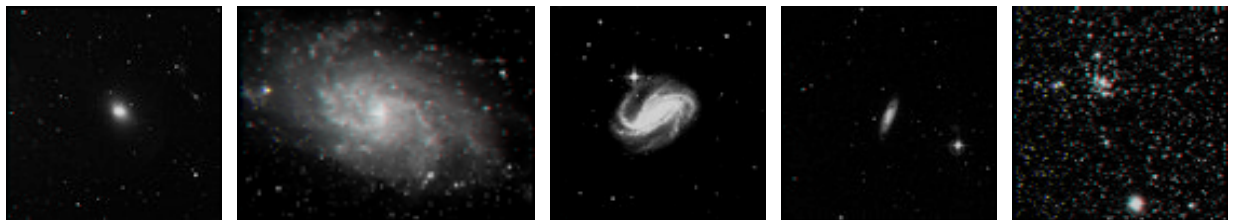
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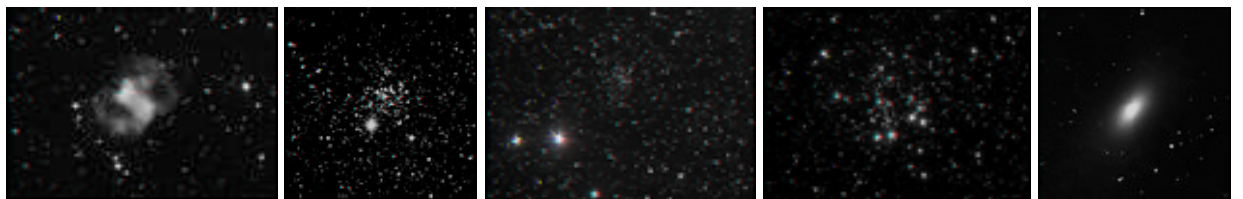
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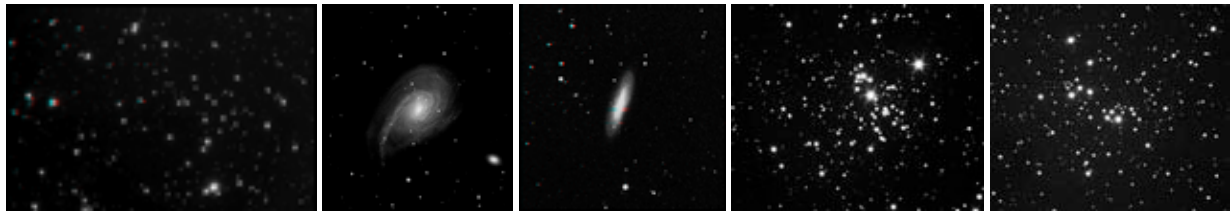
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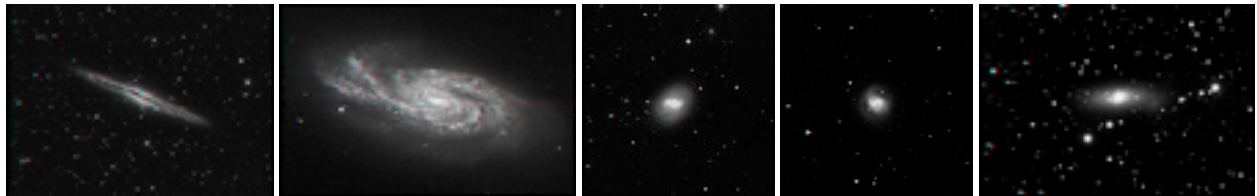
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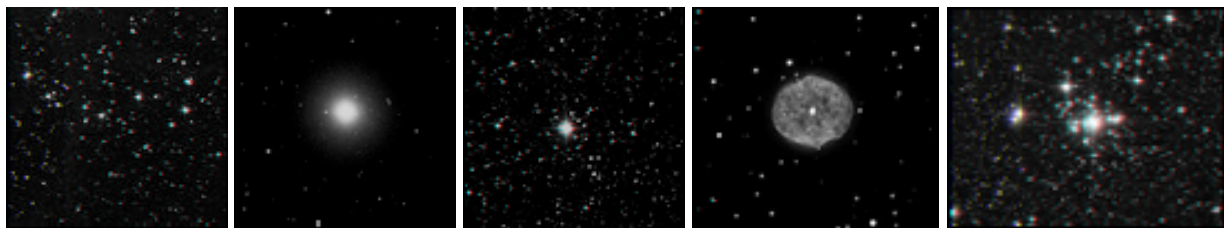
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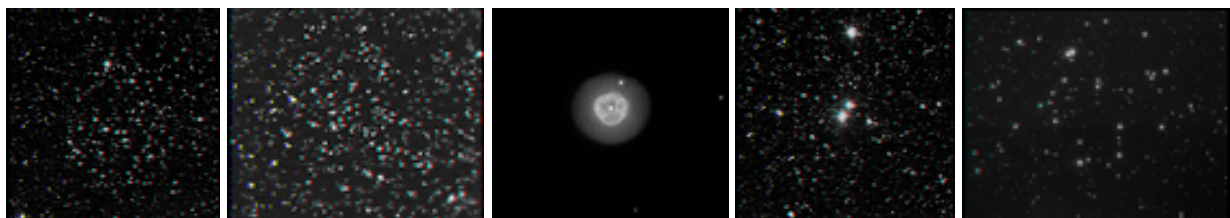
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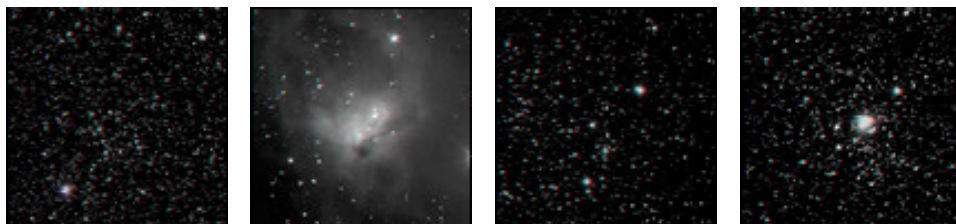
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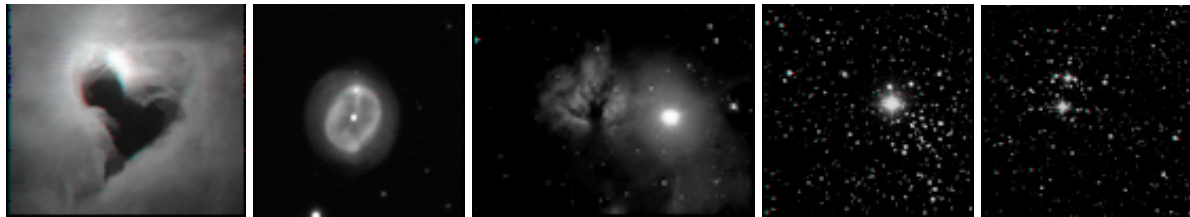
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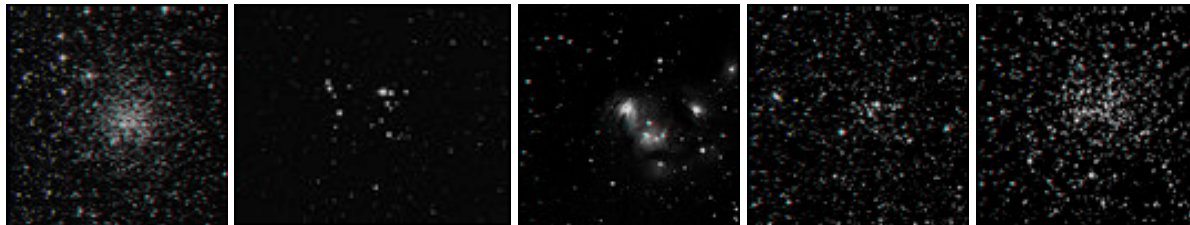
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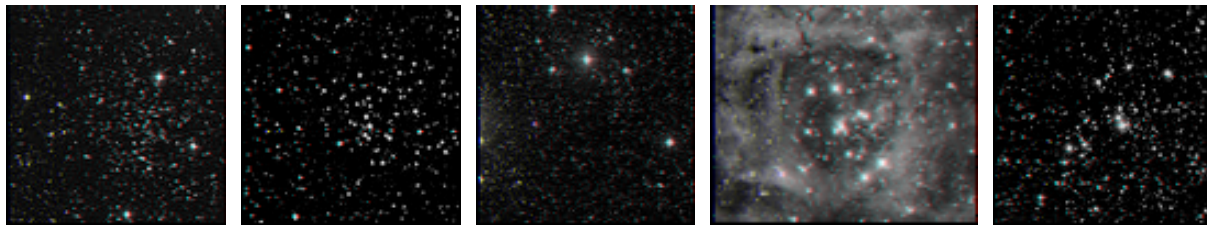
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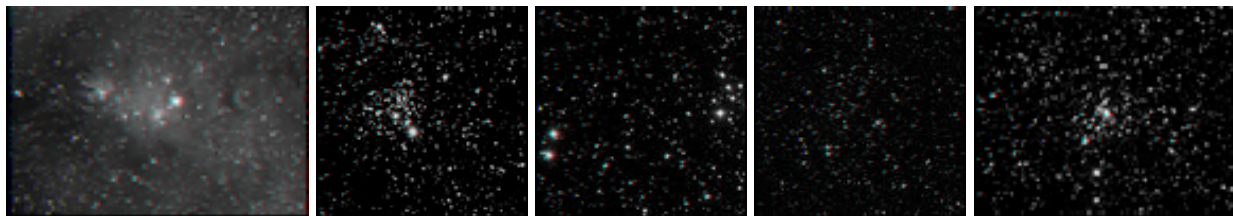
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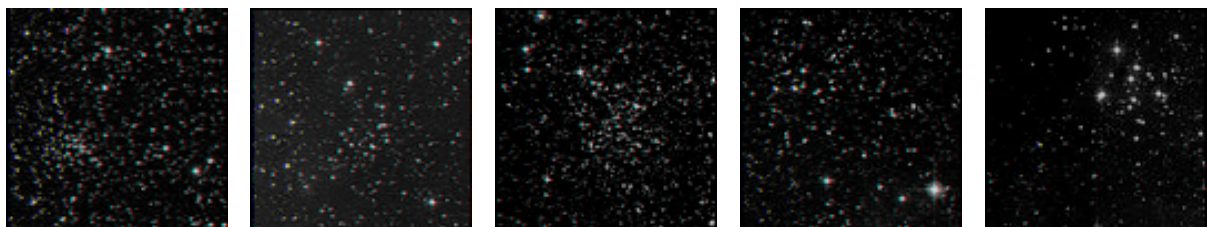
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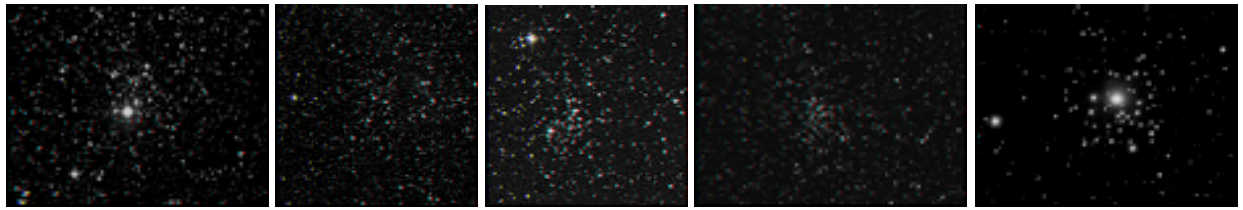
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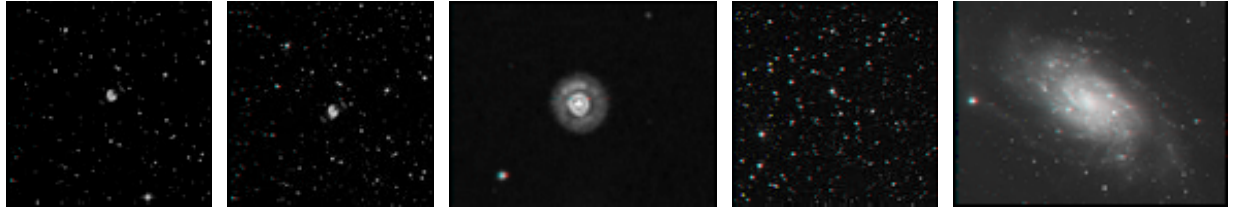
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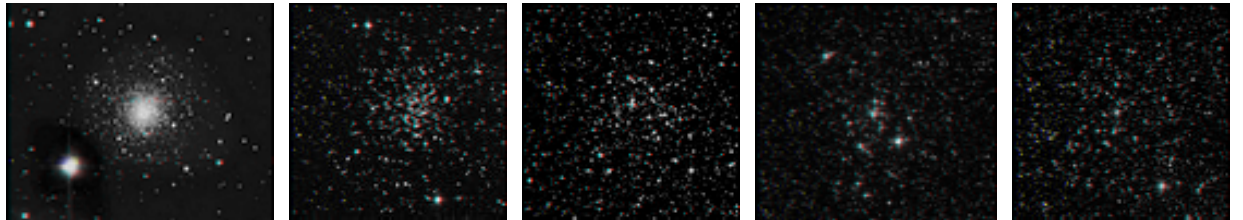
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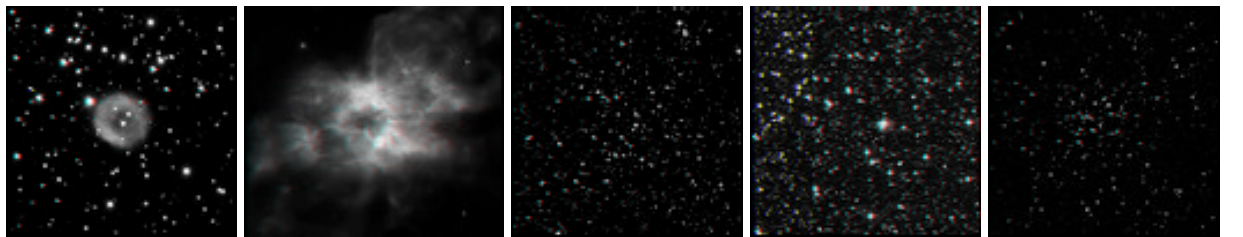
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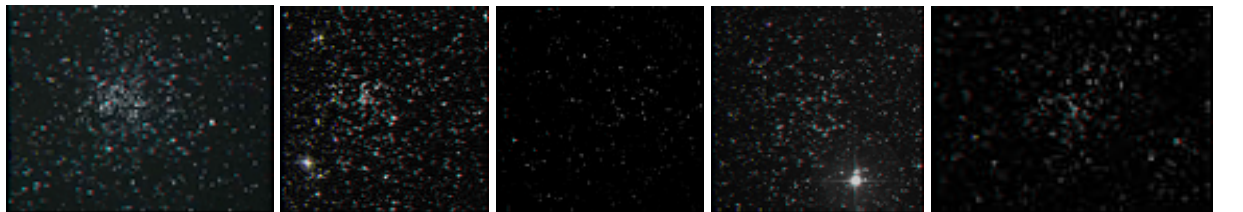
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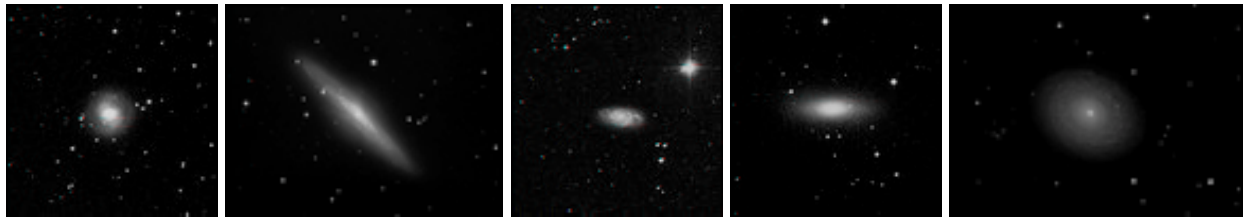
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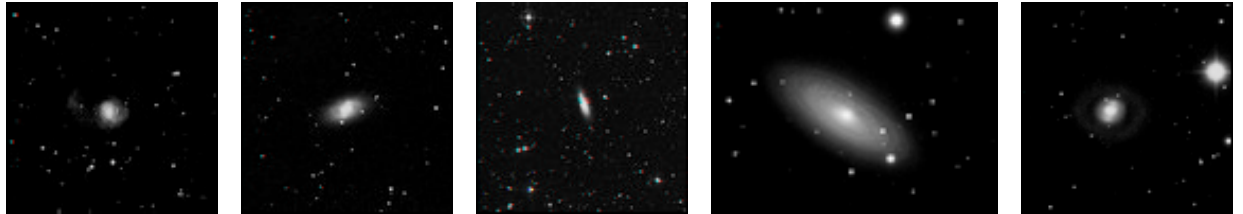
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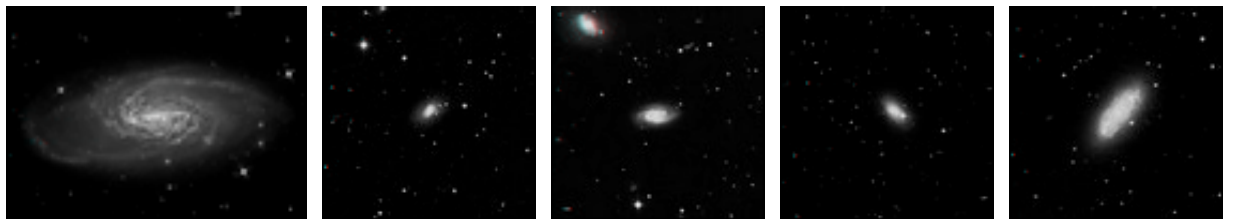
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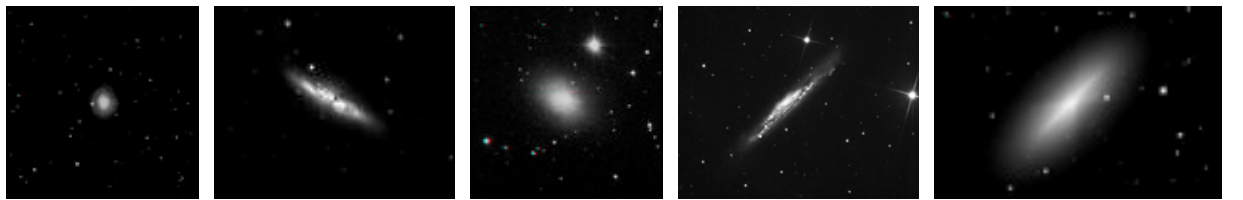
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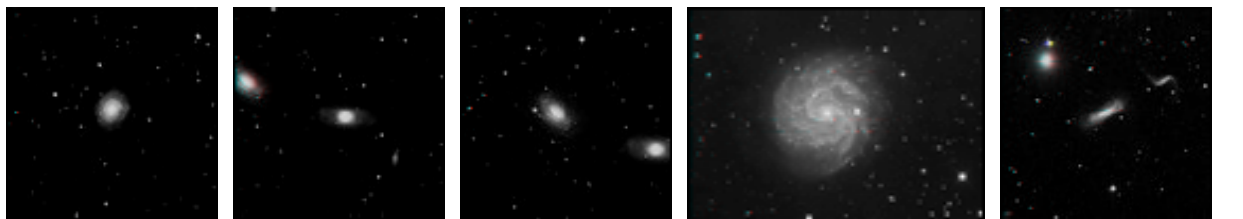
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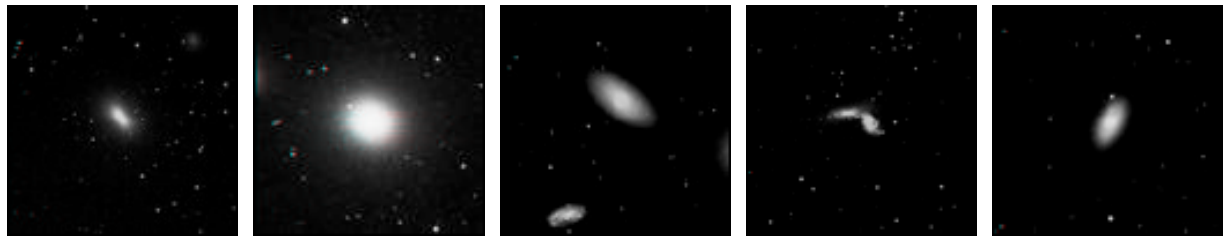
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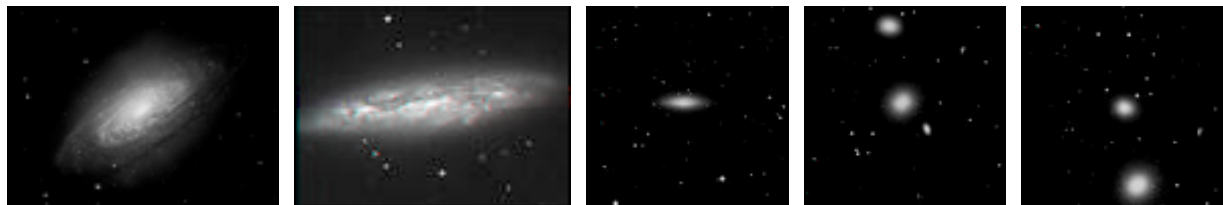
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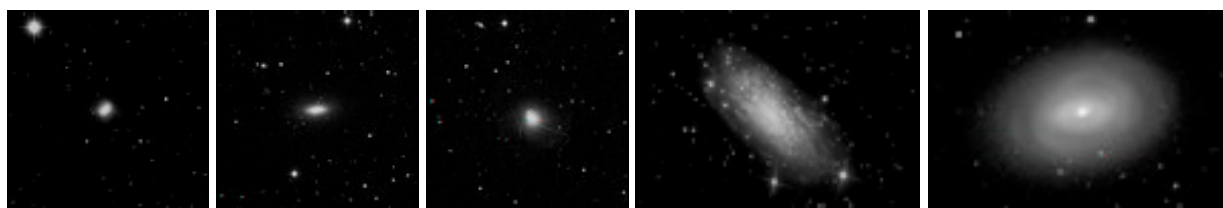
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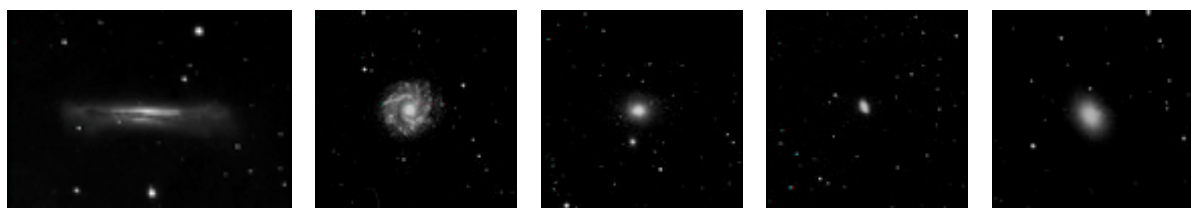
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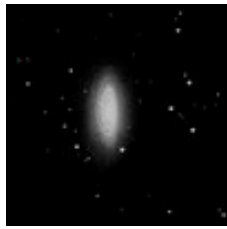
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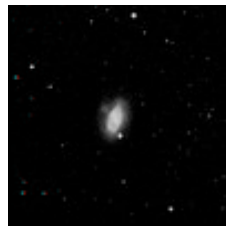
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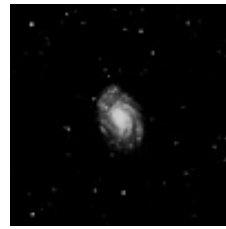
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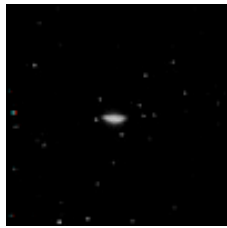
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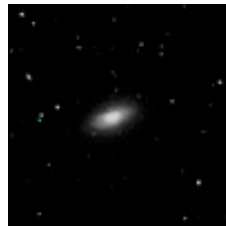
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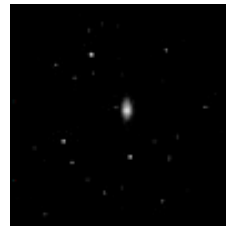
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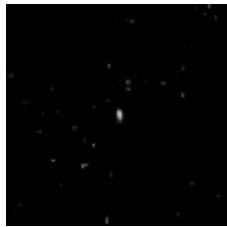
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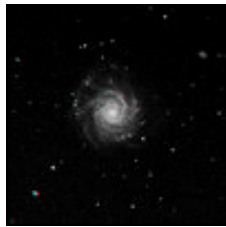
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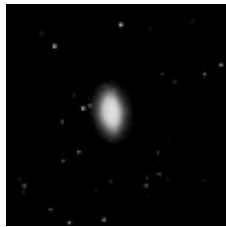
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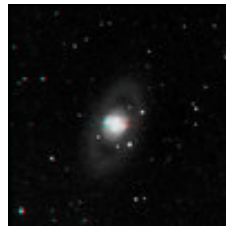
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N3938



N3941



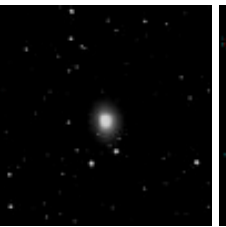
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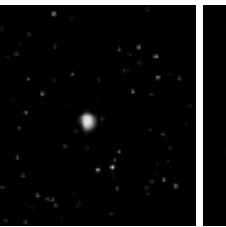
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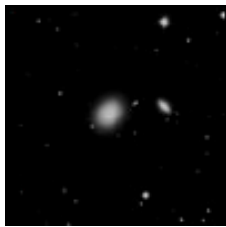
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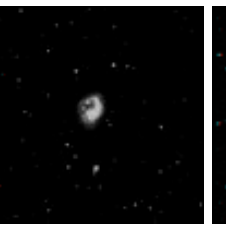
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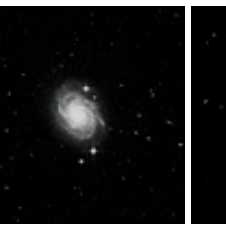
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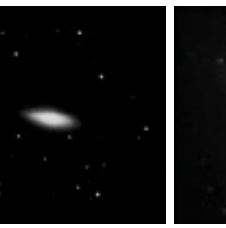
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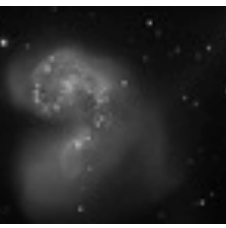
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N4030



N4036



N4038



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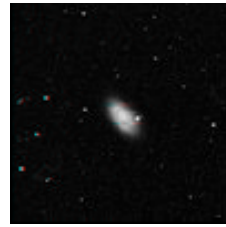
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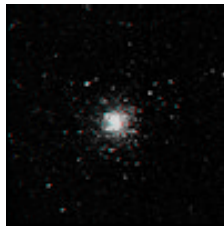
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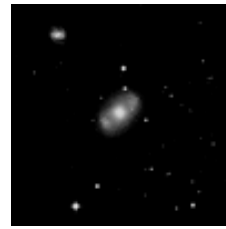
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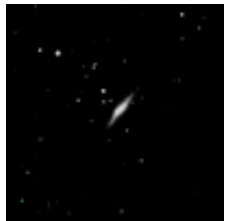
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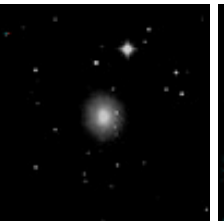
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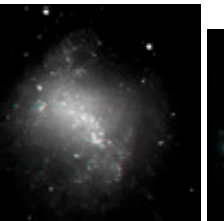
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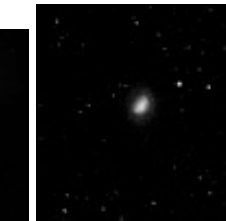
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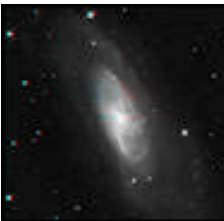
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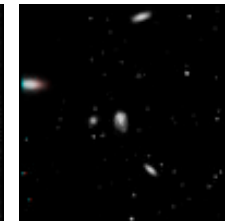
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N4258



N4261



N4273



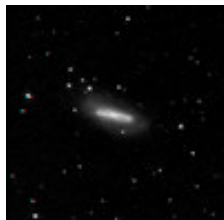
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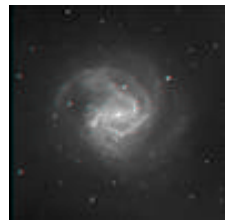
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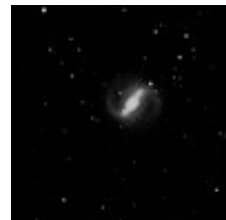
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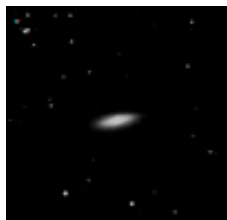
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N4303



N4314



N4346



N4350



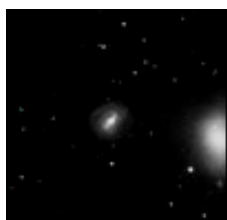
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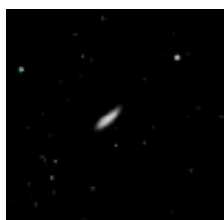
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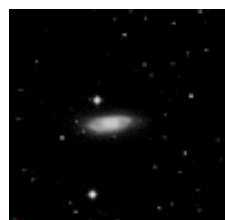
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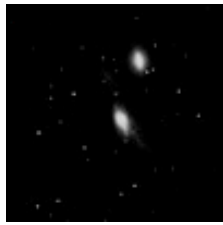
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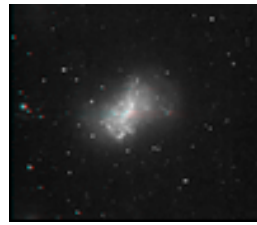
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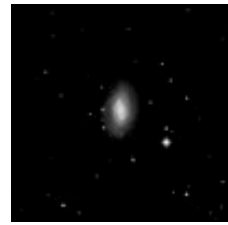
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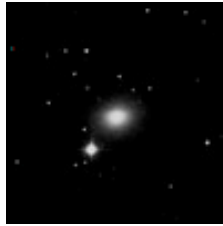
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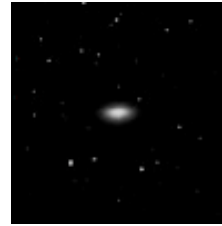
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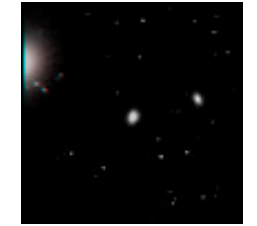
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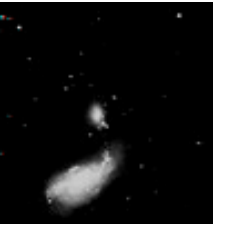
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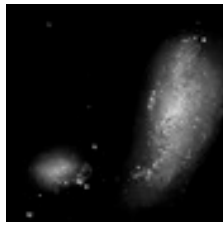
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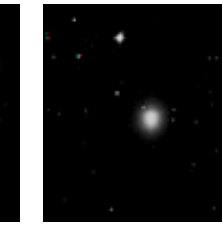
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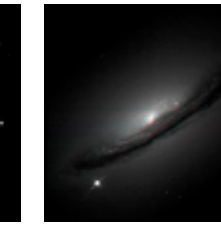
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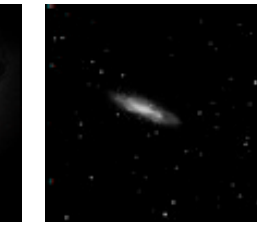
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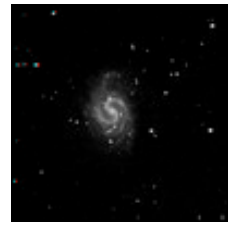
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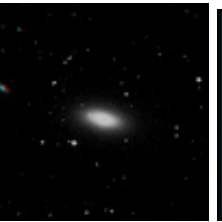
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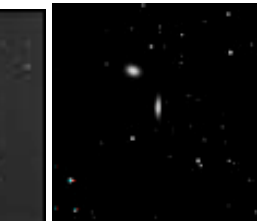
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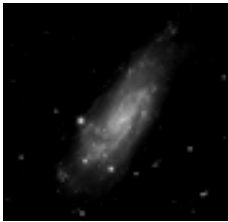
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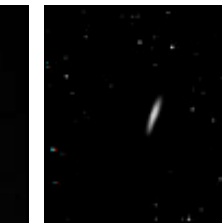
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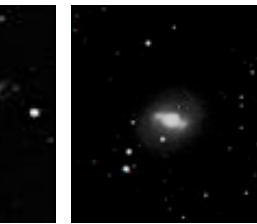
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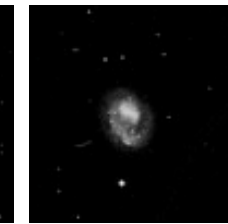
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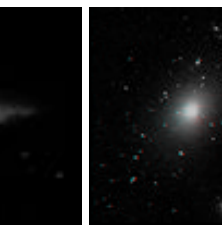
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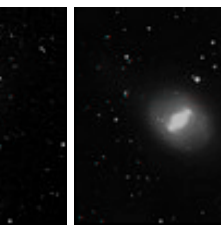
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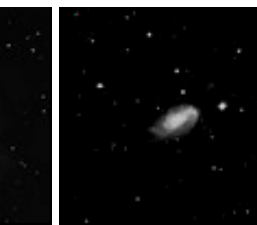
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N4636



N4643



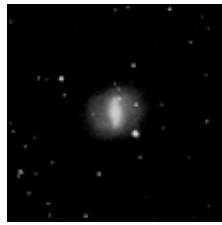
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N4656



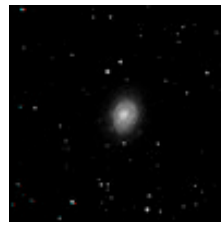
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N4665



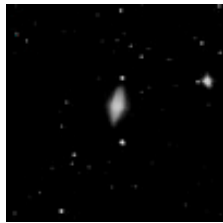
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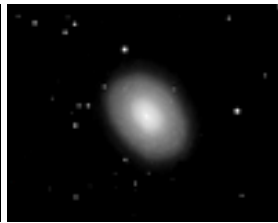
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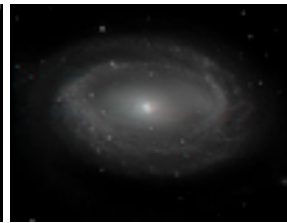
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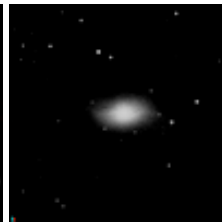
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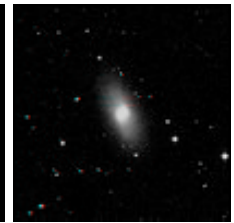
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N4725



N4753



N4754



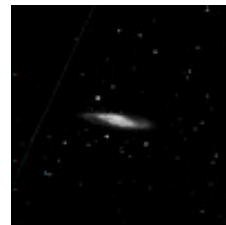
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N4781



N4800



N4845



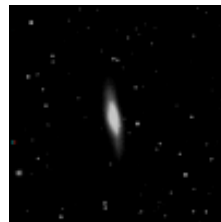
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N4866



N4900



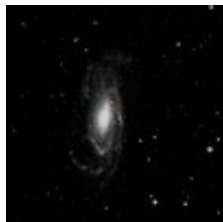
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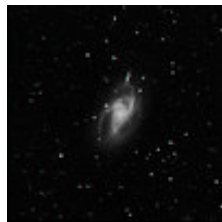
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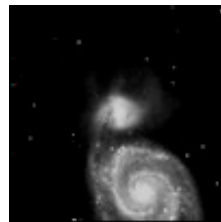
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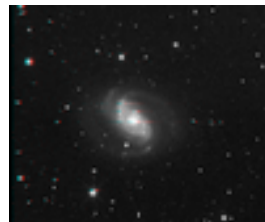
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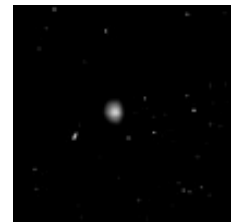
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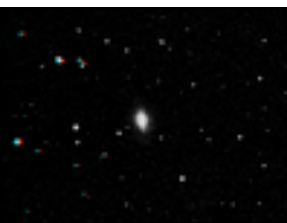
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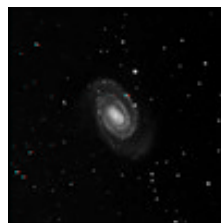
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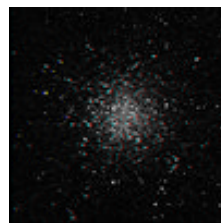
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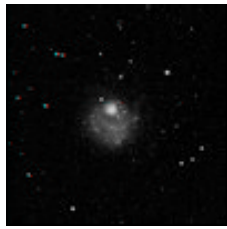
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N5466



N5473



N5474



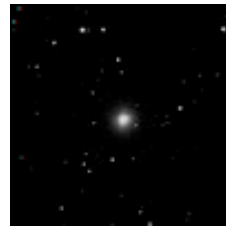
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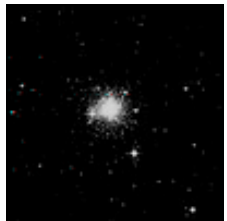
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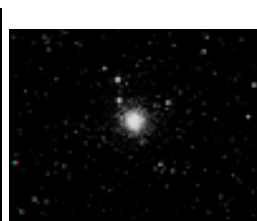
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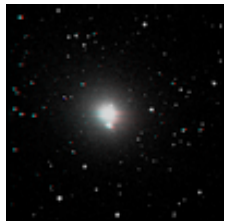
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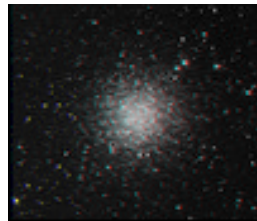
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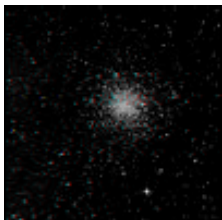
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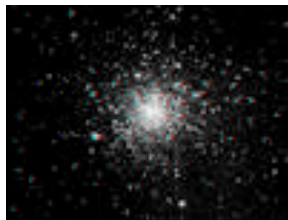
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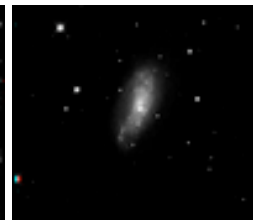
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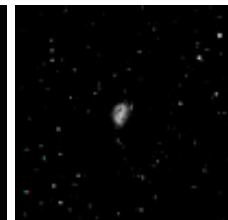
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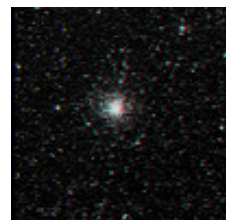
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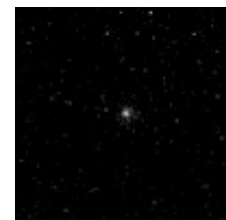
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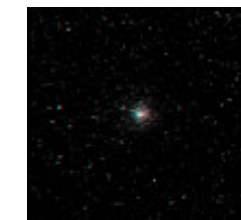
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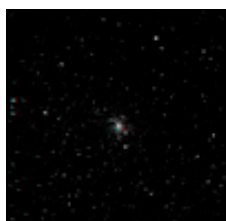
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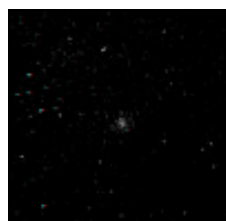
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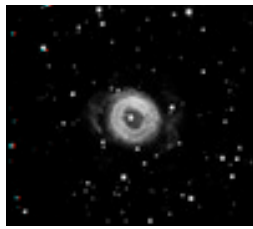
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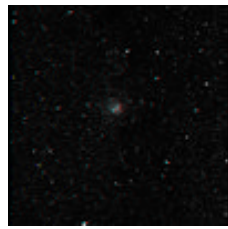
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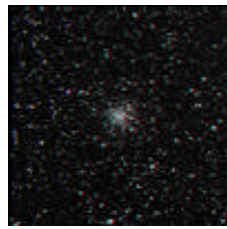
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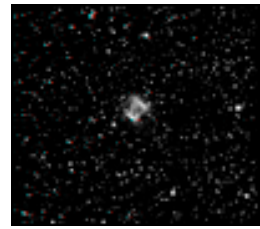
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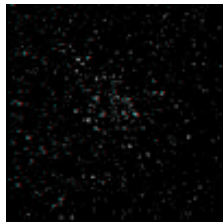
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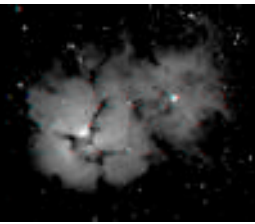
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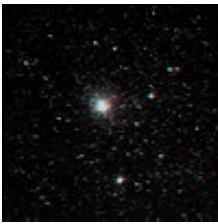
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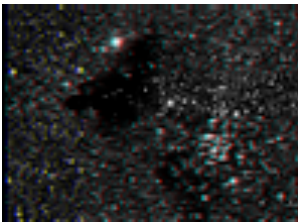
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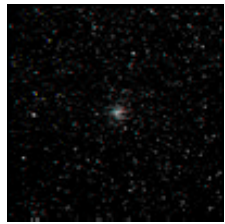
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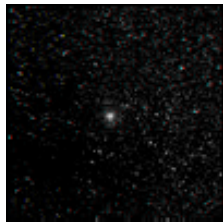
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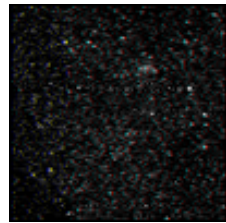
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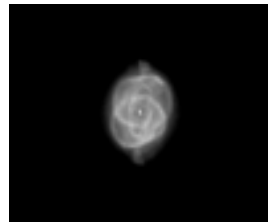
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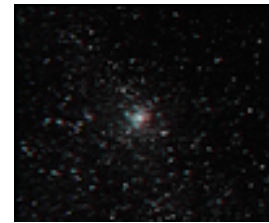
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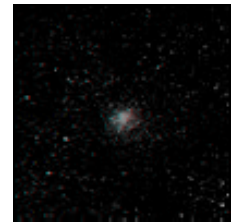
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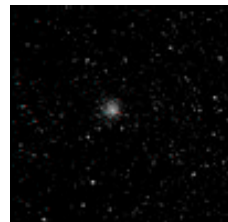
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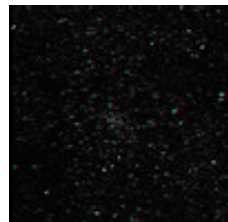
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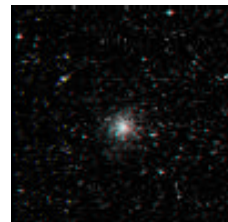
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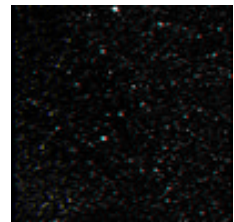
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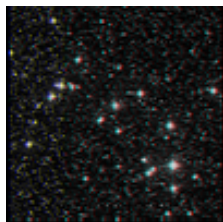
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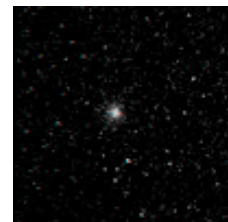
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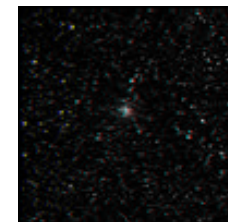
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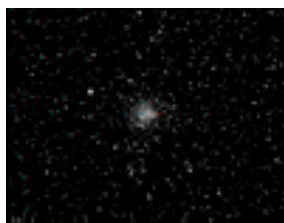
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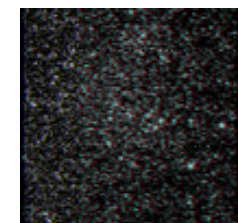
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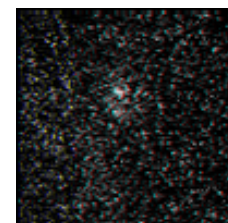
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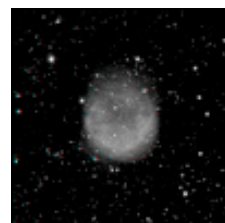
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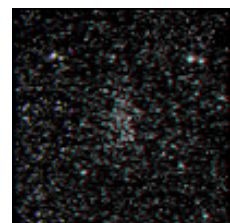
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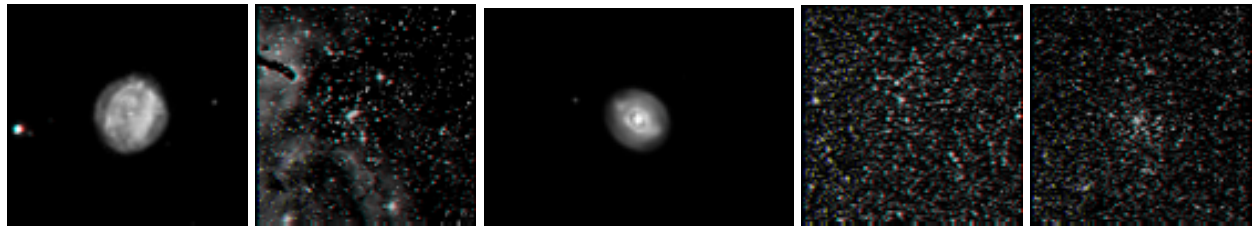
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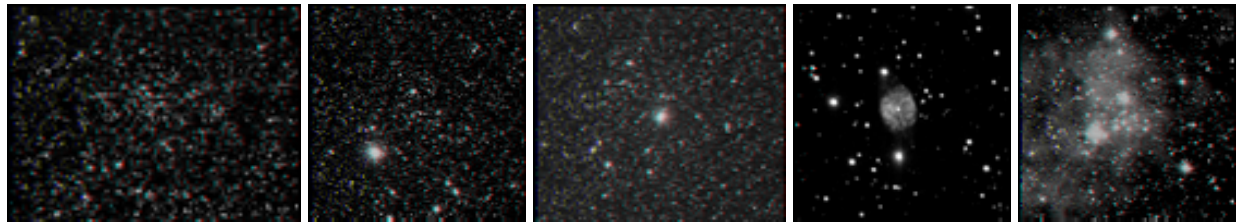
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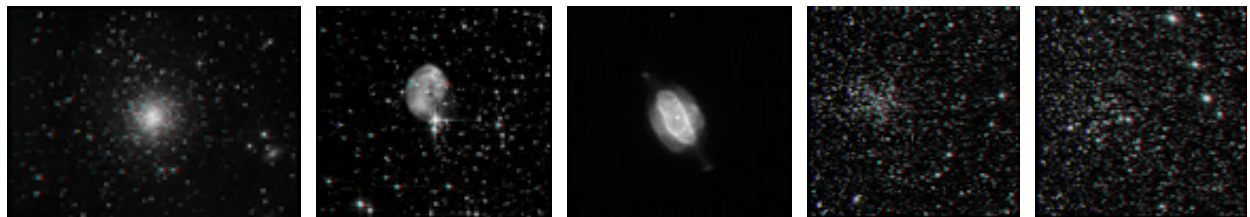
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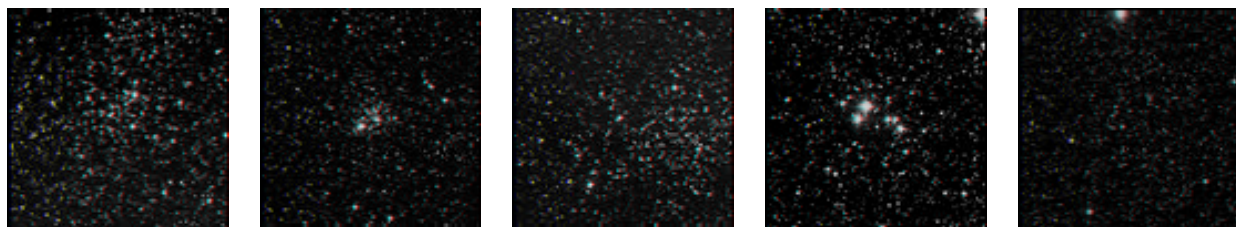
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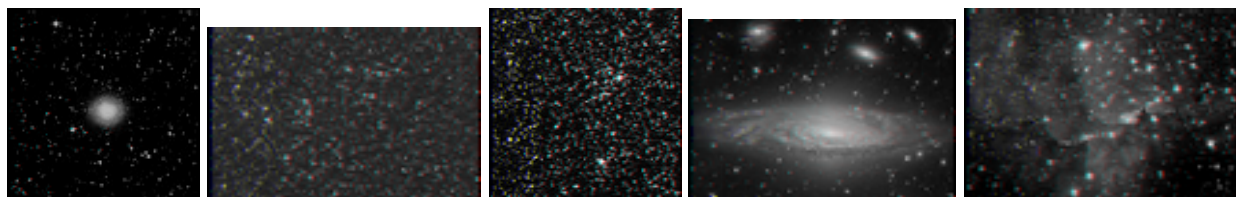
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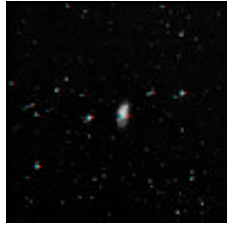
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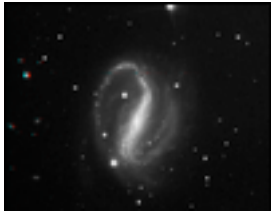
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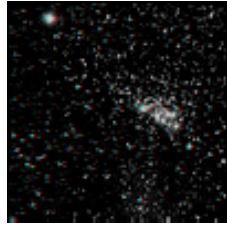
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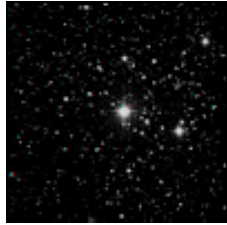
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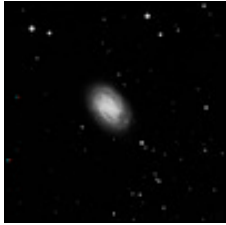
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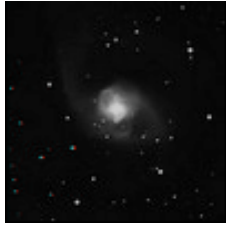
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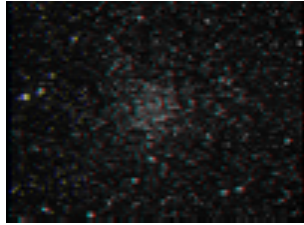
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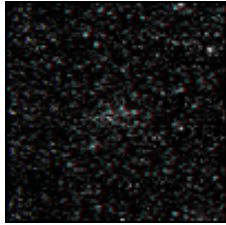
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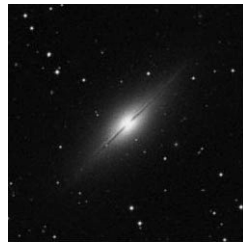
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N7789



N7790



N7814