## Chasing Billion Year Old Light by Jimi Lowrey

I have always pushed my telescopes to its visible limits. No matter what size it was. I have always got extreme pleasure at seeing distant galaxies that were a billion or more light years away. There is something hard to explain to a novice why we do this and the satisfaction it brings at catching some ancient photons from some distant object even if its just a smuts in the eyepiece. With that said this is how the Far Out list got started.

Recently a paper about super luminous galaxies at a high redshift was brought to my attention by Steve Gottlieb. On a recent observing run we observed several galaxies from the Super Spiral list and we were surprised that we could see spiral galaxies with a light travel time of 2 + billion light years. This got me thinking if there was galaxies in the NGC/IC catalog that had a light travel time of one billion light years or more. This is how the list got started. Who knew there was so many galaxies with a light travel time of one billion light years plus in the NGC/IC catalog!

I would like to thank Steve Gottlieb for all his help and support in putting this list together. Also the list would not be possible with out the search engines that my good friend Akarsh Simha provided. He really made this possible. I also would like to say thanks to Wolfgang Steinicke for his help and information he provided.

Clear Skies, Jimi

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NAME	RA	Dec	MAG	CON	TYPE	z	Gyr	Discoverer	Date	
IC 4017	13 00 15.9	+22 33 20	17.1	COM	SBc	0.1773	2.21	Wolf	1/27/1904	
IC 2657	11 15 08.7	+13 41 41	16.2	LEO	E0	0.1679	2.10	Wolf	3/27/1906	
IC 3389	12 28 23.5	+27 50 42	17.4	COM	E0	0.1267	1.63	Wolf	3/23/1903	
IC 2677	11 16 19.3	+12 12 57	17.5	LEO	N/A	0.1167	1.51	Wolf	3/27/1906	
NGC 1262	03 15 33.6	-15 52 48	14.2	ERI	SABc	0.1157	1.50	Leavenworth	11/12/1885	
IC 2834	11 27 31.8	+13 34 13	16.6	LEO	E0	0.1166	1.51	Wolf	3/27/1906	
IC 4089	13 02 01.8	+19 30 10	16.7	CRB	n/a	0.1157	1.50	Wolf	1/27/1904	
IC 4000	12 59 36.6	+39 35 16	16.5	CVN	Sbc	0.1112	1.45	Wolf	3/21/1903	
IC 2740	11 21 17.1	+08 45 08	16.8	LEO	Sb	0.1108	1.44	Wolf	3/27/1906	
IC 4481	14 40 10.1	+16 08 29	15.8	воо	SBbc	0.1107	1.44	Frost	5/10/1904	
IC 4074	13 01 49.0	+19 00 31	16.4	COM	Sbc	0.1069	1.39	Wolf	1/27/1904	
IC 3606	12 38 25.1	+12 36 37	15.6	VIR	E0	0.1152	1.49	Frost	5/10/1904	
NGC 5609	14 23 48.3	+34 50 34	15.7	воо	S	0.1006	1.32	Bindon Stoney	3/1/1851	
IC 3705	12 43 41.6	+19 19 23	16.5	COM	E0	0.0982	1.29	Wolf	1/27/1904 (	Double system
IC 3870	12 54 21.6	+22 22 54	16.6	COM	Sbc	0.0969	1.27	Wolf	1/27/1904	
NGC 4145A	12 10 53.3	+39 44 55	16.6	CVN	SBbc	0.0980	1.29	Holmberg	1937 ו	LEDA 213942
IC 3558	12 36 02.8	+11 50 59	16.6	VIR	Sbc	0.0939	1.24	Frost	5/10/1904	
IC 3195	12 21 17.4	+25 48 30	15.6	COM	S	0.0945	1.24	Wolf	3/23/1903	
IC 3242	12 23 10.4	+26 14 58	15.7	COM	Sbc	0.0942	1.24	Wolf	3/23/1903	
IC 3278	12 24 14.9	+27 25 20	15.5	COM	Triple	0.0939	1.24	Wolf	3/23/1903	
IC 3269	12 24 04.4	+27 26 05	15.8	COM	S	0.0932	1.23	Wolf	3/23/1903	
IC 3138	12 18 56.1	+12 26 43	15.7	VIR	Е	0.0932	1.23	Frost	5/7/1904	
IC 3447	12 31 17.9	+10 40 48	15.9	VIR	Sc	0.0925	1.22	Frost	5/10/1904	

IC 3898	12 55 23.8 +3	37 34 58	16.6	CVN	Sc	0.0929	1.22	Wolf	3/21/1903	
IC 3678	12 42 12.6 +2	20 52 49	16.1	COM	S	0.0911	1.20	Wolf	1/27/1904	
IC 2881	11 29 54.5 +	12 30 41	16.5	LEO	E+S	0.0908	1.20	Wolf	3/27/1906	
IC 2860	11 28 44.6 +	14 02 29	15.9	LEO	Е	0.0902	1.19	Wolf	3/27/1906	
IC 2221	08 05 07.9 +3	37 27 02	15.4	LYN	E0	0.0894	1.18	Javelle	2/28/1900	
IC 2912	11 32 07.1 +	11 42 37	16.5	LEO	S	0.0884	1.17	Wolf	3/27/1906	
IC 3610	12 38 47.1 +2	26 52 22	16.8	COM	Sc	0.0884	1.17	Wolf	3/23/1903	
IC 2858	11 28 36.0 +	13 39 41	16.3	LEO	Sbc	0.0878	1.16	Wolf	3/27/1906	
IC 3928	12 57 18.3 +4	40 26 30	16.4	CVN	Sbc	0.0876	1.16	Wolf	3/21/1903	
IC 3031	12 11 04.2 +1	13 18 29	16.4	COM	S	0.0866	1.15	Frost	5/7/1904	
IC 0685	11 22 06.5 +1	17 45 15	15.6	LEO	E3	0.0865	1.14		PGC :	34871 (Not Swift)
IC 3875	12 54 37.2 +2	22 02 11	16.0	COM	Sbc	0.0862	1.14	Wolf	1/27/1904	
IC 4918	19 59 13.2 -5	52 16 30	15.3	TEL	S0?	0.0849	1.12	Frost	8/31/1904	
IC 2760	11 22 12.7 +	12 39 57	16.6	LEO	Е	0.0849	1.12	Wolf	3/27/1906	
IC 2771	11 22 28.0 +	12 31 09	17.5	LEO	S?	0.0848	1.12	Wolf	3/27/1906	
IC 2725	11 19 57.4 +	13 25 47	16.0	LEO	E0	0.0846	1.12	Wolf	3/27/1906	
IC 2312	08 20 53.4 +3	18 30 44	16.0	CNC	Double	0.0844	1.12	Wolf	2/13/1901	
IC 3942	12 58 36.2 +3	36 07 55	16.1	COM	Lin	0.0844	1.12		I Zw	48
IC 2768	11 22 23.5 +	12 31 44	16.6	LEO	SBbc	0.0843	1.12	Wolf	3/27/1906	
IC 2898	11 31 20.4 +	13 20 10	16.1	LEO	Sbc	0.0843	1.12	Wolf	3/27/1906	
IC 3763	12 46 46.0 +2	21 59 06	16.1	COM	SBbc	0.0842	1.12	Wolf	1/27/1904	
IC 2900	11 31 29.6 +	13 10 02	16.5	LEO	SBbc	0.0840	1.11	Wolf	3/27/1906	
NGC 3908	11 49 52.7 +3	12 11 09	14.8	LEO	E0	0.0840	1.11	Swift	4/10/1885	
IC 2775	11 22 39.5 +3	12 30 44	17.0	LEO	E	0.0838	1.11	Wolf	3/27/1906	

IC 2844	11 27 58.1	+11 27 12	15.6	LEO	Sbc	0.0835	1.11	Wolf	3/27/1906
IC 3246	12 23 17.2	+13 03 06	15.4	VIR	SBbc	0.0826	1.10	Schwassmann	9/14/1900
IC 2700	11 17 54.1	+12 03 17	16.4	LEO	Sc	0.0826	1.10	Wolf	3/27/1906
IC 2702	11 17 57.1	+09 24 47	16.1	LEO	Sb	0.0823	1.09	Wolf	3/27/1906
IC 2788	11 23 27.0	+12 41 53	17.0	LEO	Triple	0.0823	1.09	Wolf	3/27/1906
IC 3934	12 58 17.6	+18 49 31	15.7	COM	SB	0.0822	1.09	Wolf	1/27/1904
IC 0030	00 34 14.7	-02 05 05	15.1	CET	S0/a	0.0821	1.09	Javelle	11/6/1891
IC 2845	11 28 00.4	+12 31 49	15.6	LEO	S0/a	0.0819	1.09	Wolf	3/27/1906
IC 1614	01 05 06.9	+33 11 25	15.2	PSC	E	0.0816	1.08	Javelle	11/30/1899
IC 2891	11 30 48.1	+12 40 39	16.0	LEO	SBbc	0.0814	1.08	Wolf	3/27/1906
IC 3929	12 57 41.1	+20 23 51	16.9	COM	Merger	0.0812	1.08	Wolf	1/27/1904
IC 2901	11 31 32.1	+12 41 59	15.7	LEO	S0/a	0.081	1.08	Wolf	3/27/1906
IC 3058	12 14 47.4	+14 05 43	15.6	COM	Р	0.0807	1.07	Frost	5/7/1904
IC 4169	13 05 12.5	+38 46 25	15.6	CVN	E	0.0807	1.07	Wolf	3/21/1903
IC 3788	12 48 07.3	+18 52 08	14.7	COM	Sbc	0.0806	1.07	Wolf	1/27/1904
IC 1757	01 57 11.5	-00 28 25	15.9	CET	Е	0.0805	1.07	Barnard	
IC 2864	11 28 59.6	+12 22 04	15.5	LEO	Sa	0.0803	1.07	Wolf	3/27/1906
IC 2938	11 35 36.3	+13 40 51	14.5	LEO	Е	0.0803	1.07	Wolf	3/27/1906 Brightest cluster gx
IC 3422	12 29 54.6	+14 41 18	15.1	COM	Sc	0.0802	1.06	Frost	5/7/1904
IC 1103	15 11 35.8	+19 12 30	14.4	SER	E4	0.08	1.06	Javelle	7/20/1892
IC 4080	13 01 57.6	+19 15 11	16.9	COM	S	0.0798	1.06	Wolf	1/27/1904
IC 3202	12 21 44.2	+27 03 27	16.4	COM	E0	0.0797	1.06	Wolf	3/23/1903
IC 2903	11 31 40.8	+12 38 32	15.2	LEO	S	0.0795	1.06	Wolf	3/27/1906
IC 4079	13 01 56.8	+19 14 54	16.5	COM	С	0.0792	1.05	Wolf	1/27/1904 Pair w/IC 4080 in grp

IC 4080	13 01 58.2	+19 15 21	16.7	COM	S	0.0791	1.05	Wolf	1/27/1904
IC 2729	11 20 06.7	+13 24 33	16.9	LEO	S	0.0791	1.05	Wolf	3/27/1906
IC 2734	11 20 23.8	+12 26 35	15.8	LEO	SBc	0.0789	1.05	Wolf	3/27/1906
IC 3557	12 36 08.1	+16 38 30	14.9	СОМ	Е	0.0789	1.05	Frost	5/7/1904 Compact group
IC 2716	11 19 16.3	+11 41 55	16.9	LEO	Sd	0.0787	1.05	Wolf	3/27/1906
IC 1101	15 10 56.1	+05 44 44	13.7	VIR	cD	0.0779	1.04	Edward Swift	6/19/1890 cD gx in Abell 2029
IC 2707	11 18 30.9	+09 28 27	15.7	LEO	SBbc	0.0779	1.04	Wolf	3/27/1906
IC 2842	11 27 47.7	+09 39 07	16.5	LEO	Sbc	0.0778	1.03	Wolf	3/27/1906
IC 1917	03 22 12.4	-53 11 07	15.2	HOR	S0/a	0.0775	1.03	Stewart	10/14/1898
IC 3848	12 52 40.5	+21 24 53	15.7	COM	Double	0.0774	1.03	Wolf	1/27/1904 Double system
IC 2796	11 24 08.4	+09 20 36	16.7	LEO	Double	0.077	1.02	Wolf	3/27/1906 Double system
IC 2803	11 24 35.4	+09 51 00	16.5	LEO	Sbc	0.0765	1.02	Wolf	3/27/1906
IC 2655	11 15 05.2	+12 09 52	16.6	LEO	Е	0.0764	1.02	Wolf	3/27/1906
IC 2793	11 23 47.3	+09 26 59	16.6	LEO	Double	0.0763	1.02	Wolf	3/27/1906 Double system
IC 2753	11 21 59.7	+09 52 40	16.2	LEO	E	0.0762	1.01	Wolf	3/27/1906
IC 2750	11 21 50.8	+09 39 30	16.7	LEO	Sc	0.0762	1.01	Wolf	3/27/1906
IC 2821	11 26 34.9	+13 57 45	16.1	LEO	E0	0.0758	1.01	Wolf	3/27/1906
IC 0886	13 23 57.4	-04 23 41	15.3	VIR	E0	0.0758	1.01	Javelle	6/10/1893
NGC 5914B-2	15 18 46.1	+41 53 11	15.4	воо	Sb	0.0755	1.01	Holmberg	1937 LEDA 2188560
IC 2756	11 22 00.9	+09 57 37	16.4	LEO	Sbc	0.0754	1.00	Wolf	3/27/1906
IC 3857	12 53 56.1	+19 36 25	16.9	COM	Sc	0.0751	1.00	Wolf	1/27/1904
NGC 3950	11 53 41.4	+47 53 04	15.7	UMA	Е	0.0746	1.00	Rosse	4/27/1875
NGC 5285	13 44 25.8	+02 06 35	14.2	VIR	Е	0.0722	0.96	Stephan	4/29/1881