

# Advanced Observing – The Texas Star Party - 2012

## “Anything Abell”

(Observe any 20 of the following objects)

### Abell Planetary Nebula:

<u>Name:</u>	<u>RA – Dec.:</u>	<u>Const.</u>	<u>Mag.</u>	<u>Size</u>	<u>Class</u>	<u>Mag. C. Star</u>	<u>Urano 1</u>
Abell 22	07 36 08.2 + 02 42 24	CMi	15.4 (P)	2.1 x 1.4'	3	19.5	229
Abell 24	07 51 39.3 + 03 00 29	CMi	13.5 (V)	6.0 x 5.5'	4 + 3	17.1	230
Abell 31	08 54 13.2 + 08 53 59	Cnc	12.0 (V)	16.2'	3a	15.5	187
Abell 33	09 39 09.1 – 02 48 32	Hya	12.6 (V)	4.5'	2b	15.5	233
Abell 35	12 53 41.4 – 22 51 42	Hya	12.7 (V)	12.8'	3a	9.6	329
Abell 36	13 40 41.3 – 19 52 57	Vir	13.0 (P)	6.0 x 5.0'	3b + 3a	11.5	331
Abell 37	14 04 25.9 – 17 13 40	Vir	13.9 (V)	54"	2c	17.9	331
Abell 43	17 53 32.2 + 10 37 25	Oph	14.6 (V)	78" x 72"	2c	14.7	204
Abell 46	18 31 18.6 + 26 56 11	Lyr	14.3 (V)	60.0"	3b + 2	14.9	160
Abell 50	18 59 19.9 + 48 27 53	Dra	13.4 (V)	36" x 30"	2c	20.0	83
Abell 53	19 06 46.1 + 06 23 50	Aql	15.5 (V)	31.0"	4	20.9	206
Abell 55	19 10 25.8 – 02 20 25	Aql	15.4 (P)	50.0"	3	20.5	251
Abell 63	19 42 10.4 + 17 05 11	Sge	17.1 (P)	34"	2	14.6	190
Abell 65	19 46 34.3 – 23 08 14	Sgr	13.2 (V)	2.3'	2a	15.9	342
Abell 66	19 57 31.8 – 21 36 37	Sgr	14.9 (P)	4.5'	3b	17.3	342
Abell 72	20 50 02.1 + 13 33 29	Del	13.8 (V)	2.0 x 1.8'	3b	16.1	209

### Abell Galaxy Clusters & Galaxy:

<u>Name:</u>	<u>R.A. – Dec.:</u>	<u>Const.</u>	<u>Mag.–10<sup>th</sup></u>	<u>Size</u>	<u>Class</u>	<u>#Galaxies</u>	<u>z</u>	<u>M.LYrs</u>	<u>Urano 1</u>
AGC 779	09 19 48.0 + 33 46 00	Lyn	13.8	50.4'	O 1 I-II	32	.0230	316.1	103
AGC 1016	10 27 00.0 + 10 58 00	Leo	15.4	22.4'	O 3	37	.0322	433.3	190
AGC 1142	11 00 54.0 + 10 32 00	Leo	15.4	16.8'	O 3 II-III	35	.0360	484.7	191
AGC 1228	11 21 30.0 + 34 19 00	Uma	13.8	50.4'	1 1 II-III	50	.0365	491.2	106
AGC 1314	11 34 48.0 + 49 02 00	Uma	13.9	28.0'	O 1 III	44	.0338	459.1	73
AGC 1318	11 36 24.0 + 54 57 00	Uma	15.0	25.8'	1 3 II	56	.0340	459.1	47
AGC 1367	11 44 30.0 + 19 50 00	Leo	13.5	100.8'	2 1 II-III	117	.0214	289.7	147
NGC4235	12 17 09.9 + 07 11 28	Vir	12.6 (B)	4.1' x 0.8'	SA()a sp	1			193
AGC 1631	12 52 48.0 – 15 26 00	Crv	15.4	33.6'	O 3 I	34	.0466	624.2	284
AGC 1736	13 26 54.0 – 27 06 00	Hya	14.8	39.2'	O 2 III	41	.0461	617.9	330
AGC 3565	13 36 42.0 – 33 58 00	Cen	13.7 (V)	56.0'	1 1 I	64	--		370
AGC 1809	13 53 18.0 + 05 09 00	Vir	15.8	16.8'	1 4 II	78	.0790	1043.2	196
AGC 1836	14 01 42.0 – 11 36 00	Vir	15.7	14.6'	O 4 II	41	.0367	497.5	286
AGC 2052	15 16 48.0 + 07 00 00	Ser	15.0	22.4'	O 3 I-II	41	.0353	487.2	199
AGC 2063	15 23 00.0 + 08 38 00	Ser	15.1	22.4'	1 3 II	63	.0355	478.2	199
AGC 2152	16 05 24.0 + 16 26 00	Her	13.8	37.0'	1 1 III	60	.0370	497.5	200
AGC 2162	16 12 30.0 + 29 32 00	CrB	13.7	56.0'	O 1 II-III	37	.0318	433.3	113
AGC 2199	16 28 36.0 + 39 31 00	Her	13.9	89.6'	2 1 I	88	.0299	417.2	80
AGC 2249	17 09 42.0 + 34 27 00	Her	15.4	16.8'	O 3 III	39	.0802	1060.8	115

Good Luck –

( $z = H_o = 71 \text{ km/s/Mpc}$ )

Charts Source: “MegaStar 5”

Larry Mitchell - Houston Astronomical Society

Planetary Nebula – Alvin Huey / Steven Hynes

## References:

### Planetary Nebula: Vorontsov-Velyaminov System

General Appearance:	Detailed Appearance:
1 = Stellar Image	
2 = Smooth Disk	a = Brighter toward Center b = Uniform Brightness c = Traces of Ring Structure
3 = Irregular Disk	a = Very Irregular Brightness Distribution b = Traces of Ring Structure
4 = Ring Structure	
5 = Irregular Form similar to Diffuse Nebula	

### Abell Galaxy Clusters:

Distance Classification	Magnitude of the 10 <sup>th</sup> Brightest Galaxy
1	13.3 – 14.0
2	14.1 – 14.8
3	14.9 – 15.6
4	15.7 – 16.4
5	16.5 – 17.2
6	17.3 – 18.0
7	>18.0
Richness Classification	No. Galaxies Within 2 Magnitudes of 3 <sup>rd</sup> Brightest
0	30 – 49
1	50 – 79
2	80 – 129
3	130 – 199
4	200 – 299
5	> 300
Blautz - Morgan Classification	Magnitude Difference Between 2 Brightest Galaxies
I	Large Difference
II	Moderate Difference
III	Little or No Difference

### **George O. Abell - Truly One of a Kind**

Research Astronomer, Teacher, Administrator, Popularizer of Science and Education and Skeptic.