SOUTHERN HEMISPHERE SPLENDOURS

BY ALAN WHITMAN

Any serious deep-sky observer yearns to experience the far-southern sky, the home of the finest emission nebula (the Carina Nebula), the most obvious dark nebula (the Coalsack), arguably the best open cluster (NGC 3532), the most impressive globular cluster (47 Tucanae), the biggest and brightest globular cluster (Omega Centauri, although it is likely the core of a small galaxy absorbed by the Milky Way), the galaxy that offers amateur telescopes hundreds of targets within it (the Large Magellanic Cloud), and the closest naked-eye star in the night sky (α Centauri), just to name a few. Here is a checklist of "must-see" splendours, rated with one to three exclamation marks, plus 16 other significant objects. The author has observed all of these objects under fine, dark skies.

Dec –35° was chosen as the northern cutoff for this list. However, three slightly more northerly objects that greatly benefit from being viewed higher in the sky were included, notably M83, because it is one of the finest face-on spiral galaxies in the southern sky, but its three spiral arms are not well seen from Canada. Countries like Australia, Chile, and Namibia offer the best views of these magnificent objects. However, most objects on the list can be viewed from the southern Caribbean; many are visible from Hawaii or from the Florida Keys; some, including Omega Centauri, Centaurus A, and the many glorious clusters in the tail of Scorpius, can be appreciated from the American Southwest. February through April are the preferred months for a southern observing run, since there are no far-southern splendours (those with exclamation marks) located between 20h and 0h of right ascension.

Data for open and globular clusters are from Archinal and Hynes's 2003 reference book *Star Clusters*, with the two noted exceptions. Data for other objects are mostly from Malin and Frew's highly recommended 1995 guidebook *Hartung's Astronomical Objects for Southern Telescopes*, 2nd ed. The dimensions of galaxies and nebulae and a few other numbers are mostly from various lists in the *Observer's Handbook* or from Sinnott's 1988 work, *NGC 2000.0*. Various sources, including private communications, have provided some difficult-to-obtain data.

Notation used below is mostly as defined on p. 314; in addition, * = star or stars, CC = concentration class of a globular cluster (see p. 312), and DN = dark nebula. Numbers without a prefix in the **NGC** column are NGC numbers.

#	NGC	Con	Type	RA (2000) h m	Dec ° ′	m_v	Size″ ′	Remarks
1	55	Scl	G-SBm	0 14.9	−39 12	7.9	32×6	! in 100-mm scope: diffuse splinter
2	104	Tuc	GC	0 24.1	−72 5	4	50	!!! 47 Tuc; yellow core in 370-mm scope
3	β	Tuc	Dbl*	0 31.5	−62 58	4.3, 4.5	27″	! both blue-white
4	SMC	Tuc	G-SBm	0 52.7	−72 50	2.3	5°× 3°	!!! many NGCs included
5	362	Tuc	GC	1 3.2	−70 51	6.8	14	! Milky Way GC beside SMC; CC III
6	p	Eri	Dbl*	1 39.8	−56 12	5.8, 5.8	12″	! both yellow-orange dwarfs
7	1097	For	G-SBb	2 46.3	−30 17	9.3	13×8	! in 300-mm scope: bar and tough arms
8	θ	Eri	Dbl*	2 58.3	−40 18	3.2, 4.1	8.4″	! both white
9	1313	Ret	G-SBd	3 18.3	−66 30	8.9	9×7	in 370-mm scope: bar, one spiral arm
10		For	Gal Cl.	3 22.7	−37 12	—	—	position is for bright 1316, Fornax A
11	1365	For	G-SBc	3 33.6	−36 8	9.5	14×10	!! in 300-mm scope: bar with 2 spiral arms
12	f	Eri	Dbl*	3 48.6	−37 37	4.9, 5.4	8.1″	! yellowish stars
13	1566	Dor	G-Sc	4 20	−54 56	9.4	13×9	!! in 250-mm scope: two classic spiral arms
14	ι	Pic	Dbl*	4 50.9	−53 28	5.6, 6.5	12.5″	! very nice yellow pair
15	1851	Col	GC	5 14.1	−40 3	7.1	12	! brightest centre of any GC; CC II
16	LMC	Dor	G-SBm	5 23.6	−69 45	0.1	11°× 9°	!!! many nights' work for large apertures
17	2070	Dor	EN/OC	5 38.7	−69 6	5.4	20	!!! Tarantula Nebula; "spider legs" easy
18	γ	Vol	Dbl*	7 8.7	−70 30	3.9, 5.4	14.4″	! gold and light-green pair
19	2451	Pup	OC	7 45.4	−37 57	2.8	50	! two OCs in radial line, 400 ly apart

SOUTHERN HEMISPHERE SPLENDOURS (continued)

#	NGC	Con	Type	RA (2000) h m	Dec ° ′	m_v	Size″ ′	Remarks
20	2477	Pup	OC	7 52.2	−38 32	5.8	20	!! 300*; arcs of 12th-mag. –13th-mag. stars
21	2516	Car	OC	7 58	−60 45	3.8	22	!! 100*; resembles the Beehive but richer
22	γ	Vel	Dbl*	8 9.5	−47 20	1.8, 4.1	41″	! 4*; 1.8-mag. star is brightest Wolf–Rayet
23	2547	Vel	OC	8 10.2	−49 14	4.7	25	! The Heart Cluster (description by Dyer)
24	IC 2391	Vel	OC	8 40.3	−52 55	2.6	60	! o Vel Cluster; bright stars; fine in binocs
25	2736	Vel	SNR	9 0.4	−45 54	—	20x0.5	! Pencil Nebula, part of Vela SNR; use filter
26	2808	Car	GC	9 12	−64 52	6.2	14	! brightest CC I; like a pile of sand
27	3114	Car	OC	10 2.7	−60 6	4.2	35	! 120*; four arcs of stars in binocs
28	3132	Vel	PN	10 7.7	−40 26	9.2	0.8	Eight-Burst Nebula; colourless
29	3199	Car	EN	10 17.1	−57 55	9	22	! crescent formed by Wolf–Rayet star
30	3201	Vel	GC	10 17.6	−46 25	6.9	20	star chains right through core; CC X
31	3293	Car	OC	10 35.8	−58 14	4.7	5	!! Gem Cluster; EN/RN/DN involved
32	3324	Car	EN	10 37.3	−58 38	6.7	15	two-lobed nebula
33	IC 2602	Car	OC	10 43	−64 24	1.6	100	! θ Car Cl, a.k.a. the Southern Pleiades
34	3372	Car	EN	10 45.1	−59 52	2.5	80	!!! Carina Nebula[A]
35	3532	Car	OC	11 5.5	−58 44	3	50	!!! Football Cluster; finest OC?; 55′ across
36	3699	Cen	PN	11 28	−59 57	11.3	1.1	dark rift visible in 200-mm scope
37	3766	Cen	OC	11 36.3	−61 37	5.3	15	! triangular; 60*; λ Cen Nebula nearby
38	3918	Cen	PN	11 50.3	−57 11	8.1	0.2	! the Blue Planetary; round
39	—	Mus	DN	12 25	−72	—	3°×12′	! the Dark Doodad; near 4372 and γ Mus
40	4372	Mus	GC	12 25.8	−72 39	7.2	19	! CC XII (size is from NGC 2000.0)
41	α	Cru	Dbl*	12 26.6	−63 6	1.3, 1.6	4.0″	! blue-white pair; 3rd star 4.9 mag. at 90″
42	DY	Cru	Red*	12 47.4	−59 42	9v	—	! Ruby Crucis; 3′ W of β Cru; B−V is 5.8
43	—	Cru	DN	12 51	−63	—	6°	!!! Coalsack; forms head of the Emu DN
44	4755	Cru	OC	12 53.6	−60 21	4.2	10	! Jewel Box; sparse in small apertures
45	4833	Mus	GC	12 59.6	−70 52	6.9	14	! CC VIII (magnitude is from W.E. Harris)
46	4945	Cen	G-SBcd	13 5.5	−49 28	8.4	20×4	! in 500-mm scope: dark lane on SW edge
47	5128	Cen	G-S0pec	13 25.5	−43 1	6.8	26×20	!! Cen A; merging spiral and elliptical[B]
48	5139	Cen	GC	13 26.8	−47 29	3.9	55	!!! Omega Cen; huge rich oval; CC VIII
49	5189	Mus	PN	13 33.5	−65 59	9.5	2.6	! the Spiral Planetary; use OIII filter
50	M83	Hya	G-SABc	13 37	−29 52	7.6	16×13	!! in 200-mm: bar, 1 arm; 370-mm: 3 arms
51	5286	Cen	GC	13 46.4	−51 22	7.4	11	! CC V; bluish PN 5307 nearby
52	5460	Cen	OC	14 7.6	−48 18	5.6	35	25 straggling*; trapezoidal asterism in S
53	α	Cen	Dbl*	14 39.6	−60 50	0.0, 1.3	4.1″	!! rapidly changing yellow pair: 22″–1.7″
54	5822	Lup	OC	15 4	−54 20	6.5	35	! triangular; stars are in discrete clumps
55	5927	Lup	GC	15 28	−50 40	8	6	CC VIII; pair with Nor GC 5946
56	B228	Lup	DN	15 45	−34	—	4°×20′	! an unknown wonder; opacity 6
57	5986	Lup	GC	15 46.1	−37 47	7.6	10	200-mm resolves large core; CC VII
58	6025	TrA	OC	16 3.6	−60 25	5.1	15	! triangular, in three clumps
59	6067	Nor	OC	16 13.2	−54 13	5.6	15	! 100*; many pairs
60	6087	Nor	OC	16 18.9	−57 54	5.4	15	! 40*; embedded in Norma Star Cloud
61	6124	Sco	OC	16 25.3	−40 40	5.8	40	100*; many trios around circumference
62	6231	Sco	OC	16 54.2	−41 50	2.6	14	!! ζ, 6231, and Tr 24 form the False Comet
63	6242	Sco	OC	16 55.5	−39 28	6.4	9	23*; good for small scopes
64	6259	Sco	OC	17 0.7	−44 39	8	15	like a fainter M11; 120*
65	6281	Sco	OC	17 4.8	−37 53	5.4	8	25*; shines in modest scopes
66	6302	Sco	PN	17 13.7	−37 6	9.6	1.5×0.5	Bug Nebula; bright core; knots at tips
67	IC 4651	Ara	OC	17 24.7	−49 55	6.9	10	! loops and chains of 70 equal-mag. stars
68	6388	Sco	GC	17 36.3	−44 44	6.8	10	450-mm scope resolves faint stars; CC III
69	6397	Ara	GC	17 40.7	−53 40	5.3	31	!! easily resolved 10th-mag. stars; CC IX
70	6541	CrA	GC	18 8	−43 42	6.3	15	! huge outer halo; CC III
71	6723	Sgr	GC	18 59.6	−36 38	6.8	13	! CC VII; part of fine complex below
72	6726–7	CrA	RN	19 1.7	−36 54	—	9×7	! 7th-mag. stars involved[C]
73	6752	Pav	GC	19 10.9	−59 59	5.3	29	!! easily resolved 11th-mag. stars; CC VI[D]
74	7582	Gru	G-SBb	23 18.4	−42 22	10.2	4×1	brightest member of Grus Quartet

[A] Chevron-shaped dark lane, many other DN involved, including Keyhole Nebula; tiny orange mag. 5 (variable) Homunculus Nebula at centre; four OC involved

[B] Prominent broad dark lane; 370-mm scope reveals thin bright streak within the dark lane

[C] Part of !! complex with GC 6723, DN SL 40+41 (55′ long, opacity 6), variable RN 6729 (involved with R CrA), headlight Dbl* Brs 14 (mags. 6.6, 6.8 at 13″), and Dbl* γ CrA (both yellow-white, mags. 4.9, 5.0 at 1.3″ and widening)

[D] Curving star chains converge to a tiny central peak; very tight group of four 12th-mag. galaxies 1° SE