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Observing Down Under: Part III – Galaxies

by Steve Gottlieb



[NGC 1365](#)

This is the third part in a series based on my trip to Australia last summer, covering observations of a few southern showpiece objects. The other parts in the series are:

[Southern Globular Clusters](#)

[Southern Planetaries](#)

[Two Southern Galaxy Groups](#)

The week we spent at Magellan Observatory was the middle third of our trip, boxed in between a week in Sydney and a week in Cairns. All three legs were totally different types of experiences. The night before we left Magellan, the temps dipped into the mid to low 20's and the water pipes were frozen when we woke to shower. So we drove back to Sydney (a fun adventure on the left side of the road), flew up to tropical Queensland and the temperature was still in the '70's well into the evening!

These are just a few of the roughly 225 observations I made over 6 nights in mag 6.5+ skies (interrupted by several spells of cloudy skies). So many showpieces, so little time....

The Observations

NGC 55 = E293-050 = MCG -07-01-013 = IC 1537 00 15.1 -39 13 V = 7.9; Size 32.4x5.6; SB = 13.4; PA = 108d

20" (7/8/02): viewed at nearly 60° elevation at 212x, this huge galaxy was an amazing sight and overfilled the 23' field (at

least 25' in length). Near the core were two small, prominent HII knots. A couple more low surface brightness knots were visible further out on the mottled extensions. The appearance was asymmetric with the brighter WNW section bulging slightly.

NGC 1365 = E358-017 = MCG -06-08-026 = VV 825 = LGG 094-007 03 33.6 -36 08 V = 9.6; Size 11.2x6.2; SB = 14.1; PA = 32d

20" (7/8/02): viewed in the 20" f/5 at 127x and 212x appeared as an amazing two-armed barred spiral, similar to the photographic appearance. The core is a quite bright, bulging oval embedded in a larger bar oriented ~E-W. Attached at opposite ends of the bar are two long, graceful arms which extend quite a distance and are nearly straight. The arm attached on the west side of the bar wraps around a mag 12.5 star about 1' NW of the core and extends well beyond towards the NE. The opposite arm attached on the following end is slightly fainter and shoots towards the SW. The tips of the outer arms dramatically increase the total size of the galaxy.

NGC 1672 = E118-043 = AM 0444-592 = LGG 119-002 04 45.7 -59 15 V = 9.7; Size 6.6x5.5; SB = 13.4; PA = 170d

18" (7/8/02): this striking spiral galaxy appeared fairly bright and large, ~4' diameter, sharply concentrated with a very bright core. Clearly emerging from the east side of the oval core or bar was a spiral arm which curled north and wrapped around two stars to the NW of the core. The extension on the west side was just a very faint, diffuse haze on the SW side without arm structure. A mag 9 star is 6.5' ENE and a mag 6.5 star (HD 30790) is 13' NE.



NGC 2442 = E059-008 = N2443 07 36.4 -69 32 V = 10.4; Size 5.5x4.9; SB = 13.9

20" (7/8/02): at 127x (20 Nagler), the main body of this unusual galaxy appeared as a fairly faint, large, thick "bar" of just of weak concentration except for an extremely small bright core. On the NE end of the bar, a faint "arm" emerged at a sharp angle towards the NW. The contrast was improved at 212x and the brighter arm was easier to view at extending at nearly a right angle to the main body and curving towards the east on the N side. On the SW end, a broad, short low surface brightness extension was visible bending towards the SE. The main bar was elongated 2:1 SW-NE, roughly 3'x1.5', but the thick outer arm significantly increases the size to ~4.5'x2'.

NGC 4945 = E219-024 13 05.4 -49 28 V = 8.6; Size 20.0x3.8; SB = 13.2; PA = 43d

12" (6/29/02): this long edge-on spiral is fairly bright and broadly concentrated with a slightly bulging core, extending SW-NE ~14'x2.5'. The surface brightness is relatively uniform with a weak central brightening and dimming towards the tips. Set in a rich star field peppered with faint stars. Member of the Centaurus Group including M83 and NGC 5128 and is reddened by dust within our galaxy. Sizewise this galaxy is comparable in dimensions to N4565 although the dust lane on the south edge was not evident. Located just N of a line connecting mag 4.8 Xi 1 18' ESE and mag 4.3 Xi 2 31' SE. N4976 is situated 30' E.

NGC 5128 = **Centaurus A** = E270-009 = MCG -07-28-001 = Arp 153 13 25.5 -43 01 V = 6.8; Size 25.7x20.0; SB =

13.5; PA = 35d

12" (6/29/02): at 186x, Centaurus A appeared very bright with a large, prominent dust lane cutting a dark swath through the center from NW-SE. The SW hemisphere is a bit larger and more prominent and contains a bright star. There is an easy star within the dust lane (west of center) with two very faint stars at both NW and SW borders of the lane. Some haze is evident near the center of the rift, following the star superimposed on the lane.

20" (6/29/02): at 230x, Cen A nearly fills the field. The 15'x1' dark rift is fascinating with a scalloped, wavy edge and faint haze is easily visible near the center within the rift.



M83 = NGC 5236 = E444-081 = MCG -05-32-050 = UGCA 366 13
37.0 -29 52 V = 7.5; Size 12.9x11.5; SB = 12.8

12" (6/29/02): beautiful spiral structure was clearly evident with multiple knotty arms. Well concentrated with a prominent core and very small nucleus. A very long, spiral arm is attached on the east side of the central core or bar but quickly bends to the north, becoming more spread out and diffuse. It continues to wind along the entire east side of the halo and fades out near a close double star which is the middle of three collinear stars to the SE of the galaxy. Two other principal arms are visible - one is attached on the following end of the core and heads south, wrapping clockwise around the core towards the west. A third arm emerges from the core on the west side and winds clockwise towards the north. Offshoots of the main arms are difficult to trace and contribute to the general background glow of the halo.

IC 4662 = E102-014A/B = PK 328-17.1 = He 2-269 17 47.1 -64 38 V = 11.3; Size 2.8x1.6; SB = 12.8; PA = 105d

18" (7/8/02): at 171x, this irregular galaxy appears to be interacting with a companion or disrupted. The structure is difficult to separate but the brighter component on the NE side is moderately bright, small, elongated NW-SE. Attached on the south side is a larger, but fainter extension oriented nearly perpendicular to the brighter component. A faint star is at the edge. Located 10' NE of mag 3.7 Eta Pavonis which interferes with viewing. According to the article "Star formation in the irregular galaxy IC 4662" in A&A, 1990, 234,99 the two components I described both involve giant HII regions comparable to the 30 Doradus complex!

IC 4662 is identical to He 2-269 (PK 328-17.1) which had been included by Henize (1967) in a list of planetary nebulae discovered through H-alpha emission on objective prism plates. In a 1970 paper, Pastoriza gave the classification as a nearby dwarf emission line galaxy with a radial velocity of ~400 km/sec (only 6.5 million l.y.)

NGC 6744 = E104-042 = AM 1905-635 19 09.8 -63 51 V = 8.3; Size 20.0x12.9; SB = 14.2; PA = 15d

18" (7/10/02): this massive barred spiral appeared fairly bright, large, oval 3:2 ~N-S, roughly ~8'x6' with a large, bright core. About a half-dozen stars are superimposed over the face of the galaxy - possibly some of these are small HII regions. A hint of spirality was suggested within the outer region but no definite spiral structure was observed.

20" (6/29/02): bright, large, elongated 3:2 SSW-NNE, ~9'x6'. A bright, oval core or bar is surrounded by a moderately low surface halo with an impression of "motion" or arcs embedded with the outer glow.

IC 5052 = E074-015 = AM 2047-692 20 52.1 -69 12 V = 11.2; Size 5.9x0.8; SB = 12.7; PA = 143d

18" (7/9/02): at 128x this galaxy appears as a beautiful, narrow edge-on streak with little or no central concentration. It is elongated ~10:1 NW-SE, ~5'x0.5' with a slightly bulging core and a gradual tapering towards to tips. A mag 10 star lies 5' N.

IC 5152 = E237-027 = AM 2159-513 22 02.7 -51 18 V = 10.6; Size 5.2x3.2; SB = 13.5; PA = 100d

18" (7/6/02): this nearby Irregular galaxy (probably just outside the Local Group) was viewed at 171x and 228x. It appeared bright, large, elongated 2:1 ~WNW-ESE, ~3'x1.5'. A mag 7.9 star (HD 209142) is superimposed at the NW end and detracts from viewing. It's very surprising that John Herschel missed this galaxy as it is quite large and relatively prominent. Gradually concentrated to a brighter 45" core. This galaxy is often listed as a local group member.

NGC 7205 = E146-009 = AM 2205-574 22 08.6 -57 27 V = 10.9; Size 4.1x2.0; SB = 13.1; PA = 73d

18" (7/6/02): at 228x, this galaxy was surprisingly bright and large, elongated 2:1 WSW-ESE, 3.5'x1.8'. Increases to a small bright core. The outer halo on the WSW end seems to more extensive but is a noticeably lower surface brightness. A single spiral arm appears to emerge from the core on the north side and wrap around clockwise towards the east! Situated between mag 8.9 SAO 247319 4' SW and mag a mag 10 star 4' NE. Straddles the border of Tucana and Indus and close to the SW corner of Grus.

