Exploring the Southern Sky: Part IV - Two Southern Galaxy Groups

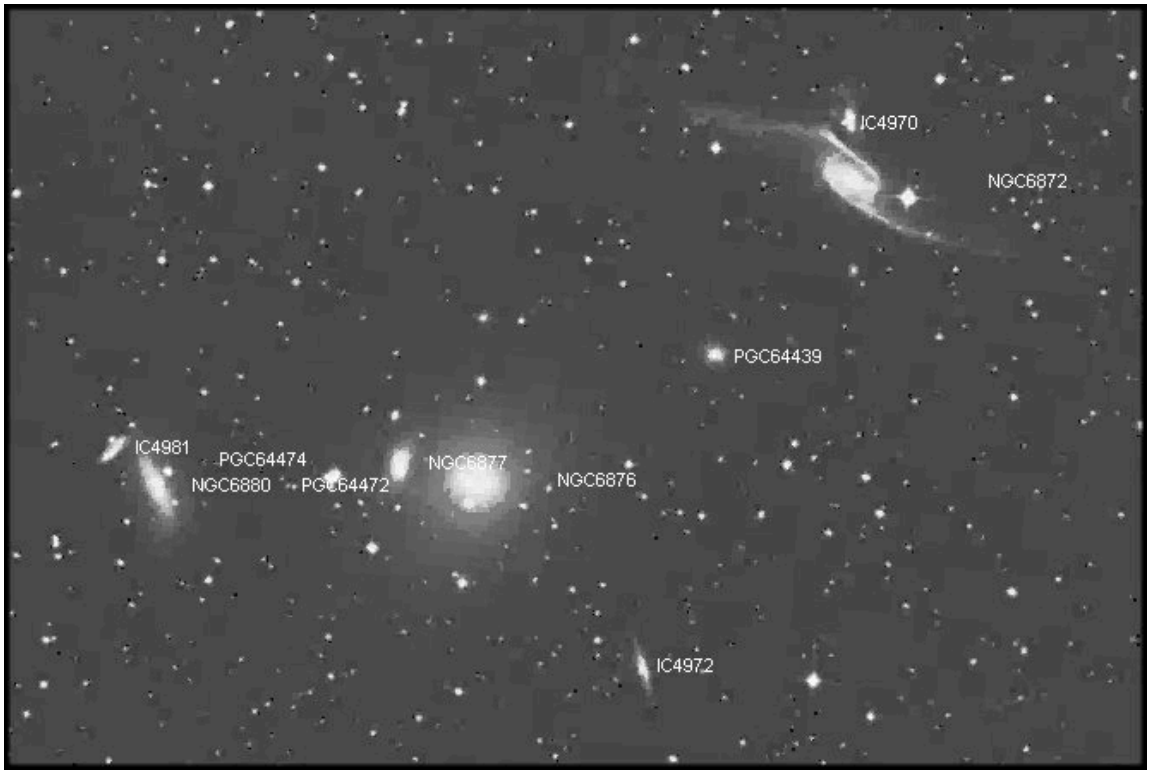
by Steve Gottlieb

This is the fourth 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
Southern Galaxies

Here are a couple of interesting galaxy groups that I checked out last July while observing at the Magellan Observatory (Lake Bathurst) in Australia with an 18" NGT. The Pavo group first caught my attention with an image in the ESO pictorial atlas "Exploring the Southern Sky" (1987) - particularly the disturbed barred spiral NGC 6872. David Frew added the group to the second edition of Hartung's Astronomical objects for southern telescopes" and included an image with the AAT. The cluster is pretty compact and 8 members fit in a 20' field with a 9 Nagler. I had no problems identifying the members using the images as finder charges, so I took the time to view the group carefully on two different evenings. At -70 degrees declination, this is strictly a southern skies target, but if you have the opportunity don't bypass the Pavo group.

The Telescopium group is much looser and spread out over a degree. It's also 22 degrees further north (-48 dec) and accessable from extreme southern sites in the U.S. In fact, I first picked off the brighter members with a C-8 in July of '91, while I was at the tip of Baja for the solar eclipse, so I wanted to have another look with the cluster riding high in the sky. Hartung mentions the brightest member, NGC 6868, can be picked up with a 4" scope (from dark skies in Victoria, Australia) and it was easy in a C-8 from Baja. A couple of the members, though, were challenging in the 18" near Lake Bathurst in New South Wales including NGC 6861B = ESO 233-026 and an anonymous member at 20 06 29.1 -48 19 43 (not in PGC or NED).

The Pavo Group:



Observing Notes

N6872 = E073-IG032 = VV 297a = AM 2011-705 20 16 56.9 -70 46 04 V = 11.8; Size 6.0x1.5; SB = 14.0; PA = 66d
18" (7/10/02): second brightest in the Pavo Group with brightest member N6876. This huge barred spiral (with excessively distended arms spanning

roughly 750,000 light years) appeared moderately bright, fairly small, elongated 2:1 SW-NE in the direction of a mag 10.4 star 1.1' WSW of center, ~1.2'x0.6', broad concentration with a brighter core. Interacting with IC 4970 at 1.1' N just outside the halo while fainter PGC 64439 lies 4.0' SE. Other members of the group include N6876, N6877, N6880.
18" (7/8/02): moderately bright, elongated 2:1 SW-NE toards a mag 10.5 star off the SW edge, 1.2'x0.5'. Fairly well concentrated with a small bright core. In 1979 A&A, 79, 22, the abstract for "NGC 6872 - A remarkable barred spiral" mentions "The extent of the arms is probably greater than in any other spiral known; it is concluded that NGC 6872 is a conventional barred spiral in which severe tidal interaction took place." See http://antwrp.gsfc.nasa.gov/apod/ap990525.html for VLT image.

IC 4970 = E073-IG033 = VV 297b 20 16 57.6 -70 44 59 V = 13.9; Size 0.7x0.2; SB = 11.6; PA = 90d
18" (7/10/02): this is an interacting companion of N6872, just 1.1' N of center in the Pavo Group. At 171x, it appeared faint, very small, slightly elongated, 20"x15". A mag 10.4 star is 1.8' SW. Images reveal a distorted bridge and plumes due to interaction with N6872.
18" (7/8/02): this small companion to N6872 appeared faint, small, slightly elongated, ~20"x15". Located 1' N of the core of N6872.

PGC 64439 20 17 27.0 -70 49 14
18" (7/10/02): this faint member of the Pavo Group is situated nearly midway between N6872 4.0' NW and N6876 4.8' SE. It appeared very faint and small, round, 0.3' diameter, low surface brightness.
18" (7/8/02): extremely faint and small, round. Located near the midpoint of N6872 and N6876.

IC 4972 = E073-034 20 17 42.9 -70 54 53 V = 14.5; Size 1.1x0.2; SB = 12.7; PA = 15d
18" (7/10/02): this was the faintest of 8 members of the Pavo Group observed and is situated 4.7' SW of N6876. With averted vision at 171x, an extremely faint, ghostly streak was just visible oriented SSW-NNE, ~0.5'x0.1' with a low, even surface brightness.

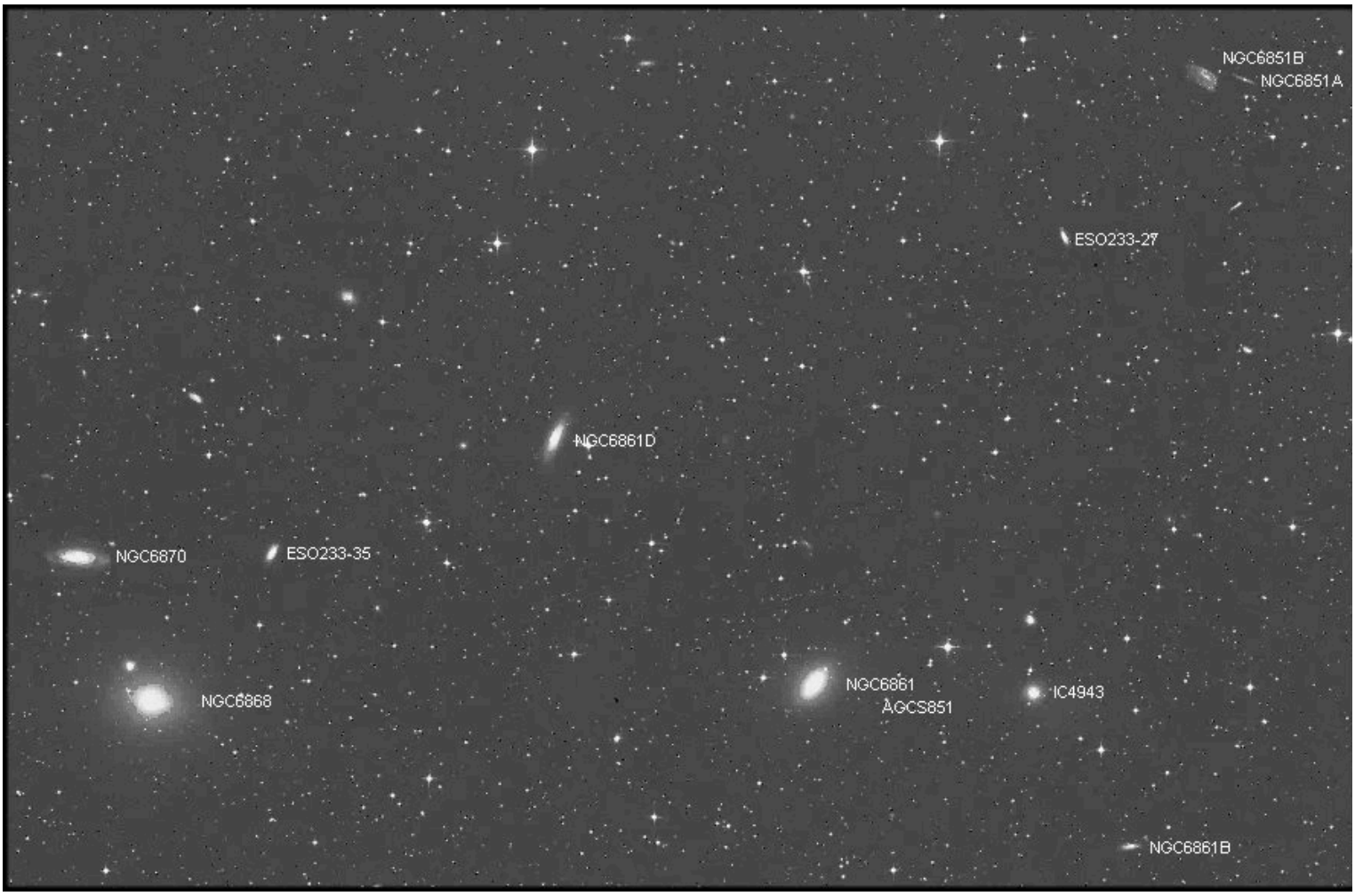
N6876 = E073-IG035 = LGG 432-001 20 18 19.1 -70 51 30 V = 11.1; Size 2.8x2.2; SB = 13.0; PA = 80d
18" (7/10/02): this is the brightest member of the Pavo Group (mean redshift 3800 km/s). At 171x, it appeared moderately bright and large, slightly elongated ~E-W, 1.5'x1.3', containing a brighter core. A star is at the south edge 0.5' from center. Forms a close pair with N6877 just 1.5' following. Other members of the group observed include N6872, N6876, N6880, IC 4970, IC 4972 and IC 4981.
18" (7/8/02): moderately bright, round, 1.5' diameter. Broadly cocnetrated with a slightly brighter core. A star is superimposed on the S edge.

N6877 = E073-036 = LGG 432-004 20 18 36.2 -70 51 11 V = 12.2; Size 1.8x0.8; SB = 12.6; PA = 169d
18" (7/10/02): this Pavo Group member is located just 1.5' E of the brightest member, NGC 6876, and is just outside the halo. At 171x it appeared faint, very small, oval N-S, 0.3'x0.15'. N6880/IC 4981 lies 4.4' following.
18" (7/8/02): fairly faint, small, elongated 4:3 N-S, 0.7'x0.5'. Forms a close pair with N6876 to the west. A close equal mag double star follows by 1'.

N6880 = E073-037 = LGG 432-002 20 19 29.7 -70 51 34 V = 12.2; Size 2.0x0.9; SB = 12.7; PA = 21d
18" (7/10/02): this galaxy in the Pavo Group appeared faint, small, elongated 5:2 SSW-NNE, 0.5'x0.2'. A mag 13 star is at the west edge. Forms a close pair with IC 4981 off the NE edge 1.1' from the center. N6877 lies 4.4' W.
18" (7/8/02): fairly faint, fairly small, 0.8'x0.4'. A 13th magnitude star is at NW edge of the halo and a fainter star is superposed on the south end.

IC 4981 = E073-IG038 = LGG 432-003 20 19 39.9 -70 50 57 V = 13.1; Size 0.9x0.3; SB = 11.5; PA = 135d
18" (7/10/02): this Pavo Group member is a faint companion of N6880 and is situated just 1.1' NE of N6880. At 171x it appeared very faint, very small, 20" diameter.
18" (7/8/02): extremely faint, small. Situated close NE of N6880. A very faint star is superimposed on the N side.

The Telescopium Group:



Observing Notes

N6851 = E233-021 = LGG 430-001 20 03 34.3 -48 17 05 V = 11.8; Size 2.0x1.5; SB = 13.0; PA = 160d
18" (7/10/02): at 128x, it appeared moderately bright and large, oval 4:3 NNW-SSE, 1.2'x0.9'. The galaxy is well-concentrated with a bright core and is collinear with two mag 9.5 stars 5' and 13' SE. N6851 is a member of the loose Telescopium Group with dominant members N6861 and N6868 (AS 851).

N6861B = E233-026 20 06 05.5 -48 28 29 V = 14.1; Size 1.2x0.3; SB = 12.9; PA = 100d
18" (7/10/02): This difficult member of the Telescopium Group = AS 851 was intermittently visible with averted avision at 128x (first of 4 in field). Appeared extremely faint and small with a very low surface brightness (viewed core only of this thin edge-on). Located 7' SW of IC 4943 and 14' SW of brighter member N6861.

IC 4943 = E233-028 = LGG 430-002 20 06 28.2 -48 22 33 V = 12.7; Size 1.5x1.1; SB = 13.3; PA = 38d
18" (7/10/02): At 128x, this member of the Telescopium Group = AS 851 appeared faint, small, round, 25" diameter. A mag 12.8 star lies 0.9' N of center. Located 8.5' W of N6861 (second brightest of four in field). Forms the southern vertex of a triangle with an extremely faint anonymous galaxy 2.8' N and a mag 10 star 3.8' NE.

Anon 20 06 29.1 -48 19 43
18" (7/10/02): At 128x, while viewing the field of N6861 in the Telescopium Group = AS 851, I picked up a very small anonymous galaxy just 2.8' N of IC 4943. It appeared extremely faint, round, perhaps 20" diameter and formed the northern vertex of a triangle with IC 4943 2.8' S and a mag 10.3 star 3.4' ESE. Surprisingly, this galaxy was not listed in NED or PGC although it is located in a cluster.

N6861 = E233-032 = LGG 430-003 = IC 4949 20 07 19.4 -48 22 12 V = 11.1; Size 2.8x1.8; SB = 12.8; PA = 140d
18" (7/10/02): At 128x, appeared moderately bright, fairly small, elongated 2:1 NW-SE with a brighter core. Two nearby mag 12 stars, 1.6' NE and 2.0' E run parallel to the major axis of the galaxy. Brightest of 4 galaxies in field with IC 4943 8.5' W, N6861B 14' SW and an anonymous galaxy 2.8' N of IC 4943. This is one of the brighter galaxies in the Telescopium Group = AS 851.
8" (7/13/91): faint, small, elongated 2:1 WNW-ESE, bright core. Forms the western vertex of an isosceles right triangle with two stars following [mag 12 star 1.6' NE and mag 12.5 star 2.0' E]. N6868 lies 25' E. Brightest along with N6868 in a group including IC 4943 8.5' W (not seen). Observation from Baja.

E233-035 20 09 25.6 -48 17 04 V = 13.3; Size 1.0x0.4; SB = 12.2; PA = 149d
18" (7/10/02): this member of the Telescopium Group was fairly faint, small, elongated NW-SE, 0.5'x0.3' with a small bright core. Forms the NW vertex of a near equilateral triangle with N6868 7' SE and N6870 7.5' E with the central core of the Telescopium Group = AS 851. A mag 10.6 star

lies 6' W.

N6868 = E233-039 = AM 2006-483 = LGG 430-004 20 09 54.3 -48 22 43 V = 10.7; Size 3.5x2.8; SB = 13.1; PA = 86d
18" (7/10/02): this is one of the brightest members of the Telescopium Group (AS 851). At 128x it appeared moderately bright and large, slightly elongated E-W, ~1.5'x1.2'. Contains a bright core which is concentrated to the center. Forms the southern vertex of an equilateral triangle with N6870 6' NNE and E233-035 7' NW.
8" (7/13/91): fairly faint, fairly small, slightly elongated 4:3 N-S, bright core. Pair with N6870 6.2' NNE and brightest with N6861 in a group. Observation from Baja.

N6870 = E233-041 = LGG 430-005 20 10 10.7 -48 17 13 V = 12.3; Size 2.6x1.2; SB = 13.4; PA = 85d
18" (7/10/02): last in a trio with N6868 6' SSW and E233-035 7.5' W within the core of the Telescopium Group (AS 851). At 128x it was moderately bright, very elongated nearly 3:1 E-W, ~1.5'x0.6' with a bright core.
8" (7/13/91): extremely faint, small, oval 2:1 WSW-ENE. Forms a pair with N6868 6.2' SSW. Observation from Baja.