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## Observing Down Under: Part II – Planetary Nebulae

by Steve Gottlieb



*[Shapley 1 - AAO](#)*

This is the second 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 Galaxies](#)

[Two Southern Galaxy Groups](#)

During the stay at the Magellan Observatory I had full access to an 18" f/4.5 JMI NGT-18, an innovative split-ring truss-tube equatorial with a rotating upper cage assembly. The scope was housed in a 4.5 meter dome (which came in very handy on windy nights) and outfitted with DSC's and it could be converted to use with a bino-viewer. Because I was trying to survey the full gamut of DSO's mostly below  $-50^\circ$  (I easily could have spent the entire time just on the Large Magellanic Cloud!), I generally stuck to eye-candy -- and there was plenty to feast on! -- and was really loafing it with an 18" on these brighter planetaries (everything below was immediately visible once in the field). Some of these were reobservations for me but from northern California I never had a really good look.

### The Observations

**NGC 2867** = PK 278-5.1 = PN G278.1-05.9 = E126-PN8 09 21.4 -58 19 V = 9.7; Size 18"x16"

18" (7/8/02): at 171x (unfiltered) this striking planetary is a bright (V = 9.7), small, very high surface brightness oval with

a pale blue color. With a UHC filter, it appeared ~15"x10" and looked like a cosmic easter egg set in a beautiful star field!

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**NGC 2899** = PK 277-3.1 = PN G277.1-03.8 = E166-PN 13 09 27.0 -56 06 V = 12.2; Size 120"x68"

18" (7/8/02): at 171x, this moderately bright planetary is fairly large, ~1.5'x1.0', with an irregular shape and surface brightness. Adding a UHC filter improved the contrast and the PN is clearly elongated with an annular or bi-polar appearance with a darker, irregular center. There are two brighter knots or arcs on the SW and NE sides of the central section (minor axis?) with the SW knot more obvious. Situated in a fairly rich star field with four mag 7-9 stars including a mag 7.3 star 9' W. The faint planetary Wray 17-31 = VBRC 2 is 38' ESE, but did not look for.

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**IC 2553** = PK 285-5.1 = PN G285.4-05.3 = E127-PN 10 10 09.3 -62 37 V = 10.4; Size 11"x7"

18" (7/8/02): at 171x this small, high surface brightness planetary was immediately seen in a rich star field. It appeared bright (V = 10.4), very small, slightly elongated, ~8"x6", with a bluish tinge. Excellent contrast gain with a UHC filter. Located 58' directly west of N3211 which was viewed right afterwards.

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**NGC 3195** = PK 296-20.1 = PN G296.6-20.0 = E019-PN2 10 09.5 -80 52 V = 11.5; Size 43"x36"

18" (7/8/02): this is an interesting planetary at 171x with a UHC filter or at 228x. It appears moderately bright and large, ~40"x35", slightly elongated ~N-S. This disc has a noticeably irregular surface brightness with a slightly brighter knot on the following side and a hint of annularity. Good response to UHC and OIII filters. Located in southern Chamaeleon between Zeta and Delta Cha.

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**NGC 3211** = PK 286-4.1 = PN G286.3-04.8 = E127-PN 15 10 17.8 -62 40 V = 10.7; Size 17"

18" (7/8/02): at 171x and UHC filter this fine planetary appeared as a very bright, round disc, ~15" diameter, crisp-edged with a bluish hue. Good filter response to UHC. The surface brightness was very high and there was a hint of a slightly brighter rim. Set in a rich Carina star field.

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**NGC 3699** = PK 292+1.1 = PN G292.6+01.2 = E129-PN21 11 28.0 -59 57 V = 11.0; Size 71"

18" (7/7/02): at 128x this interesting planetary is moderately bright, fairly large, ~70" in diameter with some faint stars superimposed. With the UHC filter the appearance is very unusual with a dark rift bisecting it in a WSW-ENE orientation just below the geometric center. At 228x, the northern "hemisphere" is both larger and brighter with an irregular surface brightness. A mag 13 star is ~1' NW. This is a fascinating planetary set in a beautiful Centaurus star field with an appearance similar to faint HII region or a small version of Cen A!

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**Fleming 1** = PK 290+7.1 = PN G290.5+07.9 11 28.6 -52 56 V = 11.6; Size 45"x30"

18" (7/7/02): excellent view at 128x and UHC filter as appears as a fairly bright oval disc, ~40"x30", crisp-edged. At 228x appears brighter to a "starry" center but a central star could not be picked out from the high surface brightness glow. The planetary is set in a rich star field 21' NE of mag 5.8 HD 99574.

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**NGC 3918** = PK 294+4.1 = PN G294.6+04.7 = ESO 170-PN13 = "Blue Planetary" 11 50.3 -57 11 V = 8.2; Size 19"

18" (7/8/02): at 171x, the "Blue Planetary" appears as a bright, round disc, ~15" diameter with a vivid blue color (V =

8.2). The surface brightness is very high and the edge of the halo is crisply defined, but no structural details were noted. Good response to UHC filter, although it is unnecessary for a good view. The milky way is quite rich here in faint stars but the planetary seems to be set a darker, circular hole without the faint background glow – a contrast affect with the PN?

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**Blaauw-Danzinger 1** = PK 293+10.1 = PN G293.6+10.9 11 53.1 -50 51 V = 12.3; Size 82"

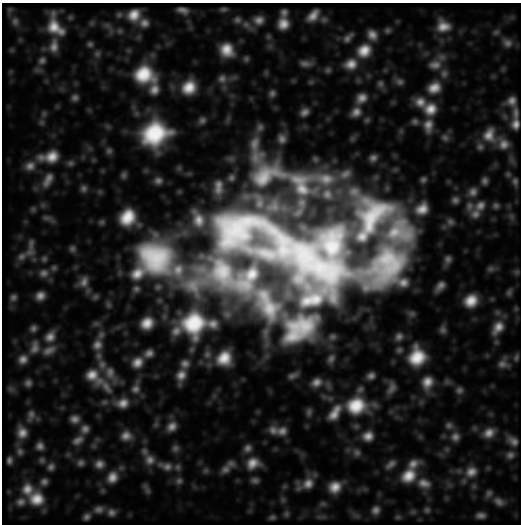
18" (7/8/02): picked up at 171x without a filter as a faint haze with an 10th magnitude star nearly attached on the SE side. With the UHC filter, the planetary was easily visible as a moderately large, round disc with a crisp edge, ~70" diameter. The brighter star, 0.9' from center, still detracts but the planetary seems pretty evenly lit.

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**Kohoutek 1-23** = PK 299+18.1 = PN G299.0+18.4 12 30.9 -44 14 V = 12.6; Size 68"x55"

18" (7/7/02): at 128x and UHC, K1-23 appeared as a moderately bright disc, slightly elongated ~N-S, ~50"x45". The rim appeared slightly brighter giving just a suggestion of annularity. This object was surprisingly easy and relatively prominent! At 228x, a very faint mag 14.5-15 star is embedded at the NW edge of the rim. A 6" pair of mag 10 stars lie 4' ESE. The Centaurus Cluster is located ~4.4 degrees NE.

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**NGC 5189** = PK 307-3.1 = PN G307.2-03.4 = E96-PN16 = IC 4274 = "Spiral Planetary" 13 33.5 -65 58 V = 9.5; Size 185"x130"

12" (6/29/02): this is a bright, strange-looking PN with a complex bar structure dubbed the "Spiral Planetary". At 140x and UHC filter, it resembles a small barred spiral galaxy with prominent bar extending SW-NE with curved tips, ~1' in length embedded within a fainter, slightly elongated halo of ~2'x1.5'. A few stars are superimposed. At 186x, the "bar" is irregular and knotty with a bright knot at one end. A mag 11 star is at the SE end with a couple of faint stars on the opposite end. The faint 14th magnitude central star is just south of the bar. Set in a rich star field in the NE corner of Musca 6' NNW of mag 7.2 SAO 252366. This is a fascinating sight!

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**NGC 5307** = PK 312+10.1 = PN G312.3+10.5 = E221-PN 11 13 51.1 -51 12 V = 11.2; Size 15"x10"

10" (6/29/02): at 214x and UHC filter, this small, fairly bright planetary appeared as a slightly elongated disc, ~13"x10" in diameter with a high, even surface brightness except for for a brightening at the center, but no definite central star. Set in a rich star field 45' ENE of gc N5286 and mag 4.7 M Centauri.

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**NGC 5844** = PK 317-5.1 = PN G317.1-05.7 = He 2-119 = E099-PN1 15 10.7 -64 41 V = 12.1; Size 68"x41"

18" (7/8/02): this fairly bright, moderately large planetary was quite interesting at 171x and UHC filter. It was elongated 3:2 E-W, ~55"x40". It appeared brighter on the following end with an indentation or notch on the north side giving the impression of a bipolar structure. Set in a rich Triangulum Australe star field 3' SW of a mag 9 star with a mag 10.5 star (close double) 2.5' E. This object is listed in the PK and ESO-Strausberg catalogues as He 2-119 although John Herschel's positions (from two observations) match this planetary. Listed as an unverified southern object in the RNGC and it was not included in Sky Atlas 2000.0, Sky Cat 2000.0 or the first edition of U2000.0!

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**NGC 5882** = PK 327+10.1 = PN G327.8+10.0 = E274-PN7 = IC 1108 15 16.8 -45 39 V = 9.5; Size 16"x15"

18" (7/8/02): at 171x and UHC filter, this small planetary appeared as a very bright (V = 9.5), high surface brightness round disc, ~12" diameter with a bluish color. The surface brightness is very high. At 228x there is an impression of a thin outer shell, with the size ~16" diameter.

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**Menzel 1** = PK 322-2.1 = PN G322.4-02.6 15 34.2 -59 09 V = 12.0; Size 29"x23"

18" (7/8/02): picked up at 171x without a filter as a moderately bright, round disc, 22" diameter. Good contrast gain with UHC filter with the size increasing to roughly 27" and is slightly elongated. The surface brightness appeared irregular with an impression of a brighter rim and weak annularity. Set in a beautifully rich Norma starfield.

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**NGC 5979** = PK 322-5.1 = PN G322.5-05.2 = E136-PN3 15 47.7 -61 13 V = 11.8; Size 8"

18" (7/7/02): at 171x and UHC filter, N5979 appeared moderately bright, small, round. The disc was 10"-15" diameter and fairly evenly lit and seemed a bit larger than catalogued size of 8". At 228x (unfiltered), the surface brightness is slightly irregular with a possible very faint halo or the halo dims at the periphery. Set in a rich star field with a mag 10 star 2.7' S. A distinctive trail of mag 12-13 stars meander off to the east. Located in the NW corner of Triangulum Australe, about a degree from the Norma border.

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**Shapley 1** = PK 329+2.1 = PN G329.0+01.9 15 51.7 -51 31 V = 12.6; Size 80"

18" (7/7/02): at 128x and UHC filter, this ring planetary appeared fairly faint, round, ~80" diameter and weakly annular. Upping the magnification to 171x (without filter), a faint central star (mag 14) was quite evident and the annularity was still seen. This planetary responded well to filtration and inserting the UHC filter a striking perfect ring was clearly visible, while the central star still shone steadily! This is an excellent planetary using this combination and appeared as a moderately bright, very delicate, symmetrical ring with a relatively large central hole set in a rich star field. A couple of mag 12 stars are within 2' and mag 7.7 SAO 243057 lies 6' SSE.

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**Longmore 13** = PK 345+15.1 = PN G345.5+15.1 16 09.8 -30 55 V = 15.5; Size 71"

18" (7/8/02): at 171x and UHC filter, a 60" very low surface brightness glow was visible with averted vision ~80% of time. It appeared round and fairly well-defined but very faint.

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**Menzel 2** = PK 329-2.2 = PN G329.3-02.8 = VV 78 16 14.5 -54 57 V = 12.0; Size 25"x21"

18" (7/7/02): at 171x and UHC filter a moderately bright disc was easily visible, fairly small, round, 25" diameter. The rim is unevenly lit and brighter along two opposite ends giving a weak annular appearance. Situated in a rich Norma star field. This is a very nice non-NGC/IC planetary!

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**IC 4642** = PK 334-9.1 = PN G334.3-09.3 = E180-PN4 17 11.8 -55 24 V = 12.4; Size 18"x15"

18" (7/8/02): fairly bright, small, round, compact planetary in a rich star field. Picked up immediately at 171x and UHC filter as the 15" disc was obvious. At 228x the surface seems a bit irregular with a hint of a starry center. Located just north of the midpoint connecting Beta and Zeta Arae 2° ESE and 2° WSW.

**NGC 6326** = PK 338-8.1 = PN G338.1-08.3 = E228-PN1 17 20.8 -51 45 V = 11.1; Size 16"x11"

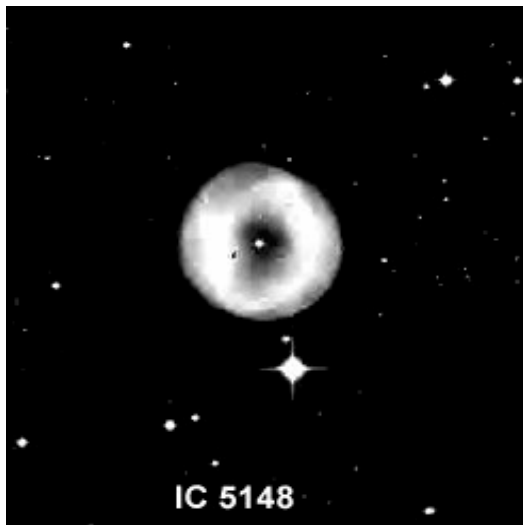
18" (7/8/02): very bright, small, round compact PN in a dense field of stars. A couple of mag 14 stars are just off the N and E sides. At 171x and UHC filter, the crisply defined periphery is slightly elongated and evenly illuminated with no hint of a central star. The diameter appears to be ~15" with V mag ~10.5. Located 3.5° NE of gc N6397 and a similar distance SSW of gc N6352.

**Longmore 16** = PK 349-4.1 = PN G349.3-04.2 = E333-015 17 35.7 -40 11 V = 13.4; Size 83"

18" (7/8/02): Immediately picked up at 171x and UHC filter and I was pleased to find a relatively prominent non-NGC/IC planetary. Appears as a fairly faint, moderately large well-defined disc, ~80" diameter, with a mag 12 star just off the N edge.

**Shapley 3** = PK 342-14.1 = E229-06 = PN G342.5-14.3 18 07.3 -51 01 V = 13.5; Size 36"

18" (7/9/02): easily picked up sweeping at 76x with the 27 Panoptic. At this power, it appears as a mag 12.5 "star" surrounded by a fairly small halo. Excellent view at 171x - the central star is quite bright and the halo is round, ~35" diameter. Excellent contrast gain with OIII filter and the halo was bright with a sharp edge. Set in a beautiful star field covered with a rich mat of stars.



**IC 5148** = PK 2-52.1 = PN G002.7-52.4 = E344-PN5 = IC 5150 21 59.6 -39 23 V = 11.0; Size 120"

18" (7/6/02): at 171x and UHC filter, this beautiful planetary appears as a large round ring, nearly 2' diameter, with a bright, thick annulus which is irregularly lit. The rim is slightly brighter and thicker along the SE side and also barely enhanced on the NW side. The central hole appears 25"-30" diameter and is dark except for a central star which was intermittently visible with averted vision at 228x unfiltered, although listed with a magnitude of 16.5! Good contrast enhancement with the UHC filter. A mag 10.5 is off the SSW side 1.8' from the center.

