



Antlia, the Machine Pneumatique

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Image source: Stellarium.org

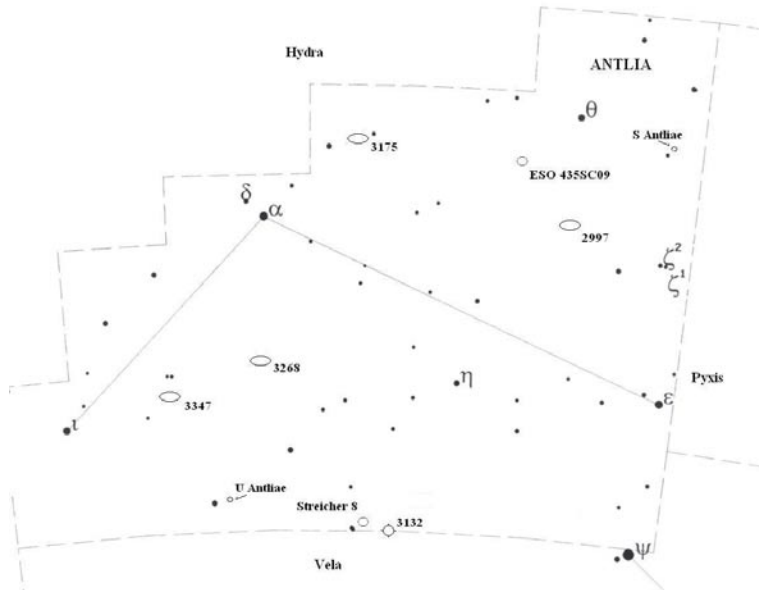
The apparently insignificant constellation Antlia lies just south of Hydra and borders Vela to the north, lying along the branches of the Milky Way. French astronomer and celestial cartographer Nicolas-Louis de Lacaille was responsible for creating some of the newer southern constellations when he visited the Cape of Good Hope from 1751 to 1753. Antlia, the baby of the Lacaille constellations, was originally named by him as the *Machine Pneumatique*, commemorating the air pump, which had recently been invented by Robert Boyle. However, I just love the German name *Luftpumpe*. Antlia is the Greek word for pump. It is difficult even to visualise a pump-shape amongst the star-formation with Antlia containing no stars brighter than magnitude 4.2. This southern treasure however, should by no means be underestimated. To start with, it hosts a huge number of galaxies.

The long leg between alpha and epsilon Antliae spans nearly 13 degrees in a westerly direction. It appears as if this part represents the base of the pump with the shorter attached tripod stretching south-east to iota Antliae. The lever of the pump seems to be projected by the double-star zeta¹ & ² Antliae, situated 4 degrees north

of epsilon Antliae and virtually on the border with the constellation Pyxis. Zeta¹ Antliae is a magnitude 6.2 silvery white primary with a magnitude 7.1 companion. The separation is 8 arc seconds and the position angle 212. John Herschel measured the star in 1836 and there has been no observable change since then. The double-star was previously identified as multiple in the *Hipparcos Input Catalogue*.

A special type of star can be found 3.3 degrees further north of zeta Antliae along the western border with Pyxis. **S Antliae** is an eclipsing binary of the EW Ursa Majoris type, a system of two dwarf stars in close orbit around each other. S Antliae varies by half a magnitude from 6.4 to 6.9 over a period of only 7 hours – quite easy to follow during the course of an observation session – as noted in 1888 by a man known only as Paul of Washington (*Star names*, Richard Allen). At the time of its discovery it was the variable star with the shortest period known.

Notwithstanding the fact that galaxies are some of the faintest objects, observing them remains an unbelievable privilege. The beautiful **NGC 2997**, also known as Bennett 41b, is situated 4 degrees south-



east of S Antliae and is certainly outstanding in appearances. Although not that bright, this galaxy is easily seen as a north-west to south-east oval. Higher power reveals that it gradually brightens towards a well-defined, but small nucleus. The north-eastern and south-western outer edges appear gaseous and bulge slightly, almost like drooping shoulders, with a hint of spiral structure towards the western side. A few faint stars can be seen close to the south-eastern and western rim of the galaxy (see sketch). NGC 2997 was discovered by William Herschel in 1793. He noted it as a nebulous atmosphere, extremely dilute and little brighter towards the middle. Other observers disagree about the appearance of the galaxy's nucleus. John Herschel records it as a fairly distinct, round nu-

cleus. Walter Scott, the late American amateur, recorded it as a glow with little central condensation while Ernst Johannes Hartung notes it as having a well-defined, much brighter nucleus. Hartung produced a comprehensive and highly respected guide for southern observers in 1968.

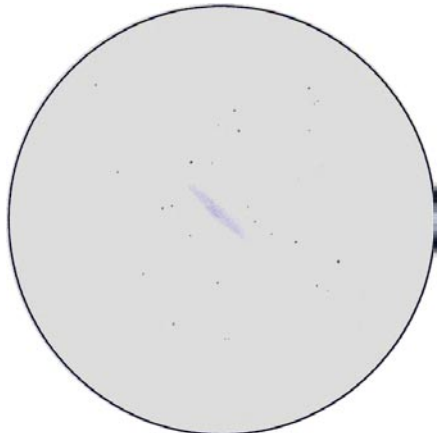
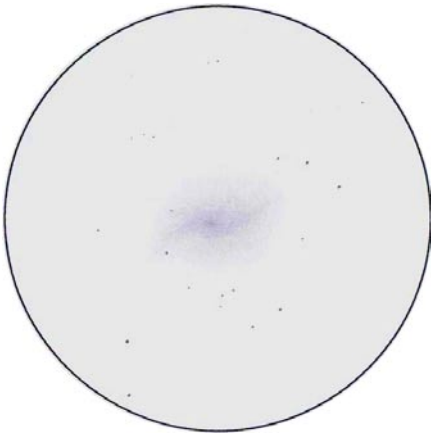
One of the few open clusters in Antlia, **ESO 435SC09**, can be found if one draws an imaginary triangle between NGC 2997 and the magnitude 4.7 theta Antliae. About a dozen mixed-magnitude stars group together in an elongated north-west to south-east direction. It appear almost as two rows of stars running more or less parallel to each other in a slightly oval shape with fainter stars to fill in the gaps.

Alpha Antliae is an easy star to spot with the naked eye in the far north-west of the constellation. It displays a lovely warm orange colour – spectral type K4. This beautiful magnitude 4.2 star signals the portals to the many galaxies situated mainly to the south within the constellation.

Nearly two degrees south-west of alpha Antliae, Jay O’Neal picked up an asterism in this galaxy-strewn area. “Exciting” is the word when asterisms are found in many forms that represent images of sorts. It would be difficult to find anything closer to a mini Scorpius constellation if one looks at the shape of the grouping **O’Neal 10** (*Deep Sky Hunters Catalogue*). The cluster consists of around a dozen stars with the imaginary starry head of the scorpion pointing north. A lovely magnitude 8 star resembles the famous Antares in the real Scorpius constellation. The main body of the asterism runs from north to south.

NGC 3175, one of the most outstanding spindles in appearance, is situated in the far eastern part of Antlia, 1.3 degrees from Hydra. The galaxy displays with pride an elongated soft beam of light in a north-east to south-west direction. Furthermore, it has an uneven surface brightness with a faint, barely seen nucleus. A short arch-shape of a few faint stars curls out from the galaxy’s western side (see sketch). This nearly edge-on spindle is approximately 50 million light years distant.

Moving into the real deep world of galaxies, **Abell S0636**, also known as the Antlia galaxy cluster, is situated in the south-eastern part of the constellation. Abell S0636, which contains about 234 galaxies, is dominated by the two massive ellipticals, NGC 3268 and NGC 3258, with the northern subgroup gravitating around the former and the southern subgroup centred around the latter. The Antlia group of gal-

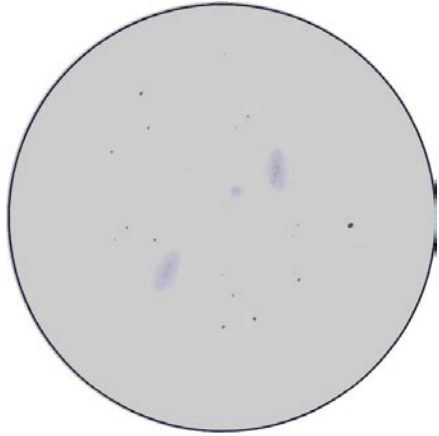


Galaxies NGC 2997 (left) and NGC 3175 (right) sketched with my 16-inch S/C at 290x. North is up and east to the left.

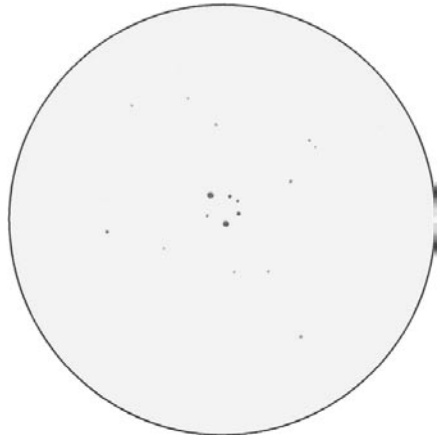
axies is also part of the Hydra-Centaurus Supercluster of galaxies, the third nearest to our Local Group. [George Ogden Abell (1927-1983) was an astronomer at UCLA. He worked as a research astronomer, teacher, administrator and populariser of science and education. Abell received his BSc (1951), MSc (1952) and PhD (1957) from the California Institute of Technology].

The main focus of the galaxy group Abell S0636, however, weaves around **NGC 3268**, by far the largest and brightest galaxy in this field, with various other members. The round to oval glow of NGC 3268 is easily seen rising evenly to a slightly brighter nucleus. What held my eye was the very soft hazy envelope around the edge of the galaxy. Hanging on the western edge of NGC 3268 is a smaller dust speck indicating the companion galaxy **NGC 3267**, surprisingly quite easily seen. A pair of faint stars separates these two galaxies from each other. **NGC 3269** is situated 6 arc minutes north, slightly elongated in a north-to-south direction, with a barely brighter nucleus. **NGC 3271** is another galaxy member, situated 5.5 arc minutes south-east of NGC 3268, displaying an elongated oval in an east-to-west direction. Outstanding is the fact that this galaxy consists of a nice bright nucleus. This group fits quite easily into something as little as a 12 arc-minute field of view.

Situated 3.8 degrees north-west of iota Antliae, is yet another galaxy grouping



NGC 3347 (above) is part of the Antlia group of galaxies while the asterism Streicher 8 (below) resembles a set of headphones.



which is also part of the Antlia group of galaxies: **NGC 3347**, situated towards the northern brink of a galaxy trio. NGC 3347 is very similar in appearance to **NGC 3358** situated at the southern end of the three star cities. These two galaxies display soft ovals, slightly hazy and barely brighter towards the middle. NGC 3347

is elongated in a north-south direction and NGC 3358 in a north-west to south-east direction. The smallest of the three galaxies, **NGC 3354**, occupies the middle seat between the above-mentioned galaxies and appears as a very small out-of-focus spot (see sketch). Again the trio can be spotted in a 12 arc minute field. If you feel like hunting down galaxies of all sorts, this is definitely the area to spend some time. What amazes me most every time I lay eyes on a galaxy is the fact that one is looking back millions of years into the past, making me realise the unfathomable vastness of space.

The Antlia Dwarf Galaxy is situated virtually on the border with Hydra. It is believed to be tidally interacting with the barred spiral NGC 3109. This dwarf galaxy was discovered by research students Alan Whiting and George Hau of Cambridge University in England while visually inspecting UK Schmidt Telescope photographic survey plates. The discovery was announced on 10 April 1997.

Take a moment to glance at α Antliae, situated 50 arc minutes north of the constellation Vela, more or less midway along the southern Antlia border. This variable star displays a lovely warm rusty colour and changes magnitude from 8.1 to 9.7 in 302 days.

The planetary nebula **NGC 3132** is bisected by the division between Antlia and Vela. Although listed as an object within Vela, I decided to borrow the Vela half for

this article. This outstanding ring nebula appears quite round in shape, with a sharply defined edge, slowly dimming towards the centre. The nebula reveals a structure that brings to mind a clown face of sorts. The north-western edge seems fainter and weaker. NGC 3132 is also known as Bennett 43, with nicknames like the ‘Eight Burst’ and the ‘Southern Ring’. Instead of the characteristic blue colour, this planetary displays a soft pale grey to white. Higher power reveals the magnitude 10 central star quite well, although it is not the one which is illuminating the nebula; that honour belongs to a magnitude 16 dwarf companion, 1.65 arc seconds away. It appears that a cup of faint stars towards the north-east holds this planetary nebula in its palm.

Just 1.3 degrees east of NGC 3132 is another asterism which really appeals to me and is a great pleasure to share with you. **Streicher 8** (*Deep Sky Hunters Catalogue*) exercises a firm grip on the southern edge of the border with the constellation Vela. Outstanding against the background star-field, this grouping consists of only a handful of stars in a half-moon shape with a difference. It reminds me of a set of headphones with bright stars at the north-eastern and south-western ends. Fainter stars connect the shape to strengthen the impression (see sketch).

Whatever the shape of this scientific starry pump, allow it to breathe new motivation into your observations when next you compile a deep-sky “to-do” list. ☆

antlia, the machine pneumatique

Object	Type	RA (J2000.0)	Dec	Mag	Size
S Antliae	Variable Star	09 ^h 32.3	-28°38'	6.4 - 6.9	Per. 7h
NGC 2997	Galaxy	09 45.6	-31 11	9.1	10.0'x6.3'
ESO 435 SC09	Open Cluster	09 55.5	-28 59	9	15'
NGC 3132	Planetary Nebula	10 07.1	-40 26	8.2	30"
Streicher 8	Asterism	10 13.8	-40 20	9	3.1'
NGC 3175	Galaxy	10 14.7	-28 52	11.3	5.0'x1.3'
O'Neal 10	Open Cluster	10 21.5	-32 44	10	11'
NGC 3267	Galaxy	10 29.8	-35 19	12.5	1.9'x0.9'
NGC 3268	Galaxy	10 30.0	-35 20	11.6	3.2'x2.4'
NGC 3269	Galaxy	10 30.0	-35 13	12.2	2.5'x1.1'
NGC 3271	Galaxy	10 30.5	-35 22	11.7	2.8'x1.5'
NGC 3347	Galaxy	10 42.8	-36 22	11.4	3.7'x1.9'
NGC 3354	Galaxy	10 43.1	-36 22	13	0.9'x0.8'
NGC 3358	Galaxy	10 43.6	-36 23	11.5	3.8'x1.7'

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