A Compass Pointing South

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Image source: Stellarium.org

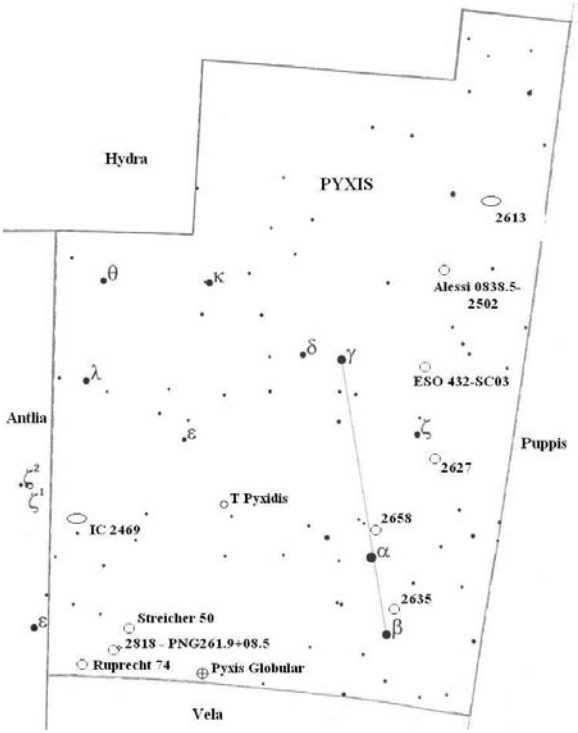
Consider for a moment those early seafarers – their fearlessness, their daring and their courage to explore the mighty oceans of the world. For them the compass must have been a most indispensable aid in their brave undertakings.

First there were the Portuguese explorers. Like Ponte Vasco da Gama, born 1460 in Sines, the province of Alemtejo, Portugal. Da Gama left Lisbon on 8 July 1497 with four ships and a crew of 170 men on a quest to discover a route from Portugal to the East. Following the route taken by earlier explorers (like Bartholomew Dias in 1488) they sailed via Tenerife and the Cape Verde Islands, reaching Lüderitz (which he thought was Cape Point) in November 1497. He finally rounded the Cape of Good Hope and went on to India. Another was Ferdinand Magellan (1480–1521), after whom the two Magellanic satellite galaxies of our Milky Way have been named. To the Portuguese navigators the Southern Cross constellation was a symbol of their faith.

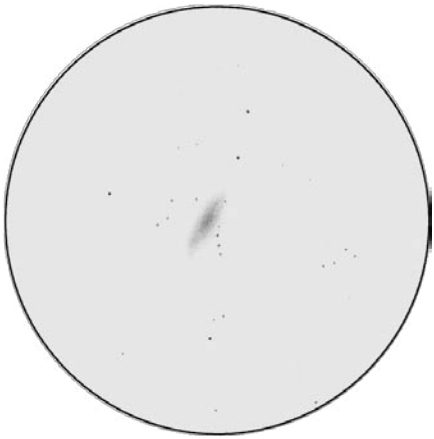
The French astronomer Nicolas-Louis de Lacaille (1713-1762) was responsible for naming some of the newer southern constellations during his stay at the Cape of Good Hope from 1750 to 1752. And of course Pyxis, the Mariner's

Vasco Da Gama's beautifully sculpted marble image at his last resting place in the Jeronimos Monastery Belem in Lisbon with a close-up of his face. (Photos: Magda Streicher)

Compass, was one of those to be accorded its place of honour against the southern night sky. The starry compass steers the stately ship of ancient times, Jason and the Argonauts' Argo Navis, accurately through the southern skies. The original constellation Argo Navis was broken down into parts by Lacaille in 1752. They are now known as Carina, Puppis and Vela. The constellation Pyxis is situated on the eastern edge of the southern Milky Way between Vela and Puppis.



A major cluster of galaxies, about 65 million light years away, known as the Puppis Concentration, spills over the Puppis border into the constellation of Pyxis. One of its members, **NGC 2613**, situated in the north-western part of Pyxis, barely one degree east of Puppis, is relatively easy to find. NGC 2613 is a barred spiral and slightly elongated in an east-south-east to west-north-west direction. The edges appear very hazy, with a brighter and longer north-western side. The relatively small, bright nucleus gives the impression of being lopsided towards the north-west. A string of very faint stars swings a quarter around the galaxy from north-west to south (see sketch). Intense deep pictures of this galaxy reveal multiple spiral arms.



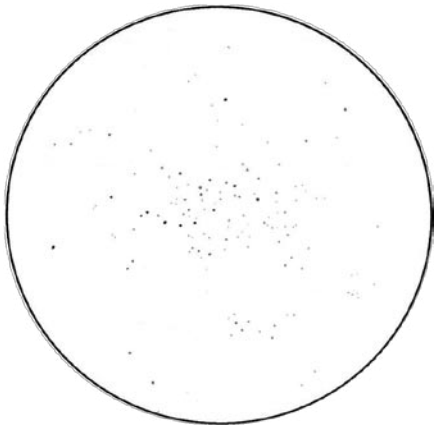
NGC 2613 sketched with my 16-inch S/C at 290x. North is up and east to the left.

A number of LBN (from B.T. Lynds' Catalog of Bright Nebulae) can be found within an area of 2 degrees east of NGC 2613. Using nebular filters make the field around this area appear quite hazy. A little asterism called **J 0838.5-2502** (*Deep Sky Hunters Catalogue*) is situated inside the western tip of nebula LBN 1073. Amateur astronomer Bruno Alessi discovered this string, in which seven outstanding stars can be seen in a curved formation. With brightness ranging between magnitude 8 and 9, they drape from north-west to south-east with a pair of coloured yellow stars claiming centre spot. Magnitude 5.2 eta Pyxidis is situated 1.2 degrees south of this little group.

The needle of the compass clearly projects through mag. 4 gamma Pyxidis and mag. 4.8 delta Pyxidis. It made me wonder whether Lacaille, in his mind's eye, saw the two beacon stars as true north and magnetic north respectively. In the starry field west of the imaginary compass needle are a few interesting star clusters.

The small group **ESO 432-SC03** is situated only 1.7 degrees west of gamma Pyxidis. This cluster displays an unusual gently curved cross-shape appearance. The group contains about a dozen stars with the brightest member at magnitude 10.6.

Further south, the star zeta Pyxidis, is a lovely double-star. It consists of a mag. 4.9 primary and mag. 9.1 companion



NGC 2627 sketched with my 16-inch S/C at 290x. North is up and east to the left.

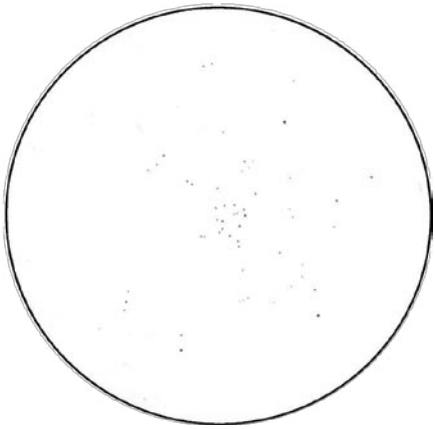
with a separation of 52 arc seconds at position angle (PA) 61. Open cluster **NGC 2627** is situated only 40 arc minutes south of zeta Pyxidis. The cluster appears very irregular, spacious, quite large, and packed with varied-magnitude stars. The main focus of this cluster is a prominent curved string of stars from east to west, clearly dividing it in two parts. The western end of the string is nicely edged by a pair of magnitude 10 stars. The bulk of the cluster, and also the brightest part, is situated towards the north. Amongst these stars a few scattered dark patches and lanes can be detected. The smaller section of the group, with fainter stars, is concentrated towards the southern side. The remainder of the stars in this patchy cluster are situated in the far western part (see sketch). My attention was drawn to the colourful stars in this cluster, shading from white into deep yellow.

Super-white alpha Pyxidis, also a double-star, keeps our compass needle in place. It shares the surrounding field of view with the galaxy NGC 2663 to the south-east and the open cluster NGC 2658 to the north. **NGC 2658**, situated only 35 arc minutes north of alpha Pyxidis, contains about a dozen faint stars with some unresolved dust, indicating more members. Strings of faint stars can be detected in the north-eastern part of the cluster. It is an attractive cluster that stands out well against the fainter background star-field.

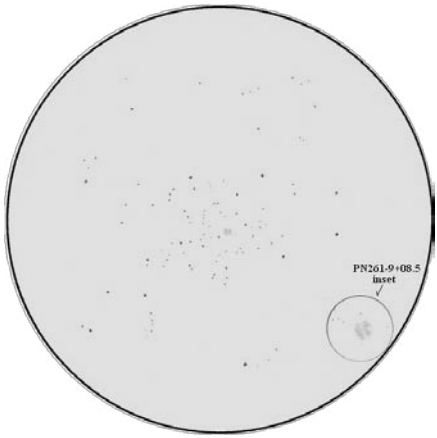
Another open cluster, very different, but well worth exploring, is situated 40 arc minutes north-west of the lovely buttery-yellow beta Pyxidis, the southern tip of the compass needle. **NGC 2635** is a small, dainty grouping, consisting of only a few faint stars. It could also be seen as a typical tight, stringy asterism, but nevertheless stakes its claim quite well. The group displays something of a V-shape in a north-western to south-eastern direction (see sketch). The area west of beta Pyxidis contains a few diffuse nebulae, making this field very interesting, although not easy to observe without the aid of filters.

The **Pyxis Globular Cluster** anchors the sails Vela against the southern border of Pyxis. This globular cluster displays an extremely faint, grainy, round haze, as described by my deep-sky friend Jenni Kay from Australia. I definitely agree with her that this cluster is not for the fainthearted. With high power it can be seen nestling inside a circle of a few very faint stars.

The compass constellation also provides a two-in-one object. Situated in the south-eastern corner, **NGC 2818** is a beautiful,



NGC 2635 sketched with my 16-inch S/C at 290x. North is up and east to the left.

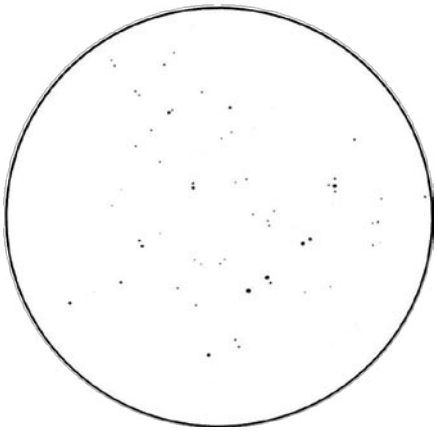


NGC 2818 sketched with my 16-inch S/C at 290x. North is up and east to the left.

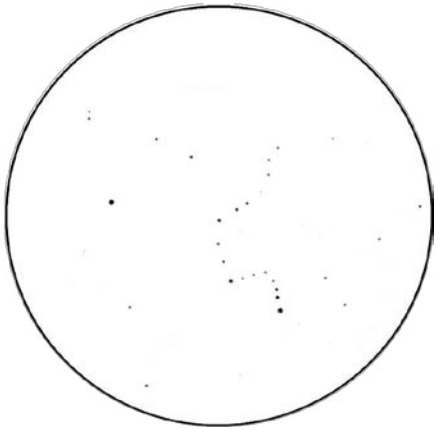
stringy cluster, appearing to form a slightly irregular oval shape from north-west to south-east. Approximately 35 members of between magnitude 12 and 13 make an outstanding impression against a sparse star-field. A few brighter stars are concentrated towards the northern part of the field. The beauty of this object is the confirmed planetary nebula situated inside and near the western edge of the cluster. Planetary nebula **PN G261.9+08.5** appears as a small round haze, easily seen embedded between the cluster stars. With really high power the planetary is divided into a pair of lobes, east and west, representing a typical dumbell shape. The western edge of the nebula displays a small dent on the side (see sketch). Some references indicate the planetary as NGC 2818 and the cluster as NGC 2818A. SIMBAD agrees, but in the NGC-IC catalogue they are both listed as NGC 2818, without any comments.

The asterism, **Streicher 50** (*Deep Sky Hunters Catalogue*) is situated 1.2 degrees north-west of NGC 2818. No fewer than thirteen various magnitude pairs are exhibited in a 40 arc minute field of view. The centre of the field is characterized by a few magnitude 8 stars which appear as double (see sketch) - probably nothing outstanding, but still noticeably different from the rest of the star-field.

The faint open cluster **Ruprecht 74** can be seen one degree south-east of NGC 2818. A handful of faint stars form a distinctive letter 'K'. Again, I detect a



Streicher 50 sketched with my 16-inch S/C at 290x. North is up and east to the left.



The zigzag asterism sketched with my 16-inch S/C at 290x.

strange, wide zigzag string, 8 arc minutes to the north-west of Ruprecht 74 (see sketch). At first I thought it to be the cluster Ruprecht 74, but it turned out not to be. The asterism is actually much more noticeable against the background star-field than the cluster.

Not to be judged on its IC number, a fairly bright galaxy, **IC 2469**, is situated 50 arc minutes west of the border with Antlia and 4.4 degrees north of NGC 2818. IC 2469 displays a slender, elongated haze in a north-eastern to south-western direction with a small, though obvious and bright nucleus. The slender south-eastern part of the galaxy seems to be better defined and perhaps slightly brighter. A faint magnitude 12 star can be seen exposed towards the south-western tip. The galaxy was missed by John Herschel, son of William Herschel, and picked up in 1897 by Lewis Swift. Swift (1820-1913) discovered 1248 new objects, putting him second after William Herschel.

T Pyxidis is a cataclysmic variable star (also called a recurrent nova). T Pyxidis, about 6 000 light years away, is composed of a dense white dwarf with a close companion star. On five occasions – in 1890, 1902, 1920, 1944 and 1966 – it was caught in outburst when it brightened dramatically from its usual magnitude 14.7 to 6.5. These eruptions occured at an average of just over 19 years apart. It was on 7 December 1966 that the most recent eruption was noticed by New Zealand amateur Albert Jones. It has been over 40 years since the last outburst and astronomers are now waiting patiently for T Pyxidis's next one. With the aid of a star map, on the night of 15 January 2010, I located T Pyxidis amongst its faint neighbours, and could see it only as an extremely faint ghostly flickering. One wonders why T Pyxidis has remained quiet for so long.

As the starry ship sails through the southern sky, allow the constellation of Pyxis to show you the way, and you will discover a wonder-world, just as the seafarers of old followed the shoreline to new worlds. ☆

Object	Type	RA (J2000.0)	Dec	Mag	Size
NGC 2613	Galaxy	$08^h33.4$	-22°58′	10.5	7.6′x1.9′
NGC 2627	Open Cluster	08 37.3	-29 57	8.4	11′
NGC 2635	Open Cluster	08 38.4	-34 46	11	3′
Alessi J 0838.5-2502	Asterism	08 38.5	-25 02	9	14′
ESO 432-SC03	Open Cluster	08 42.9	-27 52	8	11′
NGC 2658	Open Cluster	08 43.4	-32 39	9.2	12′
T Pyxidis	Variable star	09 04.7	-32 23	6.3-14	Per. 19y
Pyxis Globular	Globular Cluster	09 07.9	-37 14	12.9	4.0′
Streicher 50	Asterism	09 11.2	-35 58	8.3	33′
PN G261.9+08.5	Planetary	09 16.1	-36 37	11.9	58″
NGC 2818	Open Cluster	09 16.9	-36 37	8.2	9.0′
Ruprecht 74	Open Cluster	09 21.0	-36 57	13.7	2′
IC 2469	Galaxy	09 23.1	-32 30	11.3	4.7′x1.0′