Musca,
the Heavenly Fly

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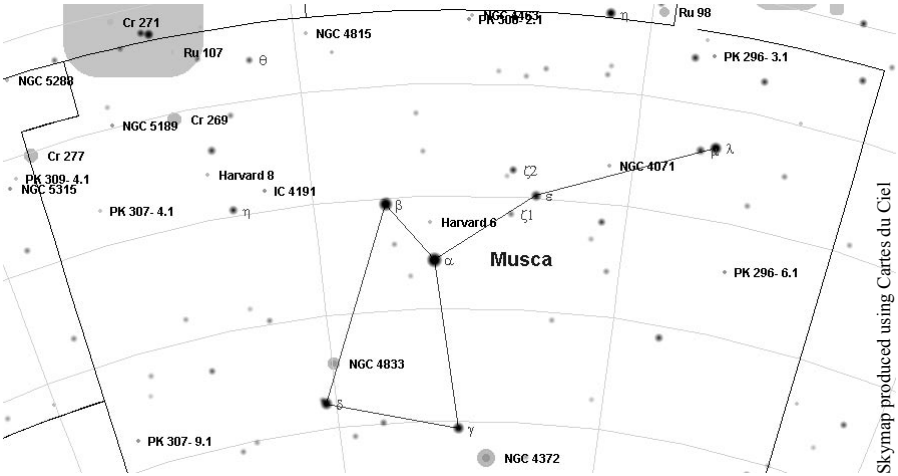
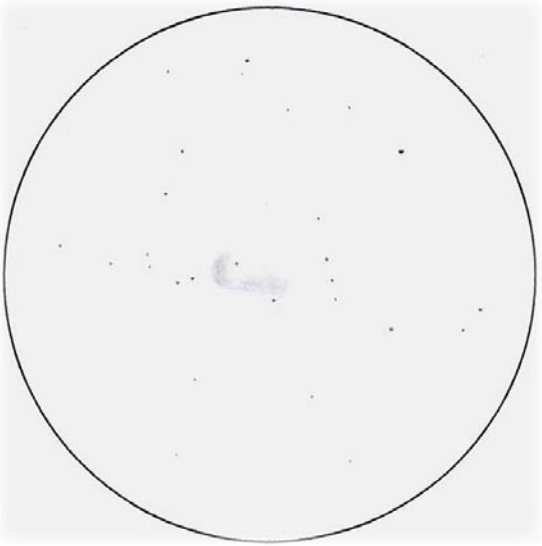
The Southern Cross is the pride of our Southern Hemisphere, and not only does its longest axes direct the way to true south, but it also shows the way to the constellation Musca, its southern neighbour. *Musca the Fly*, is the only constellation named after an insect. Johann Bayer, the German lawyer who introduced the system of identifying stars within a constellation using Greek letters, originally named this constellation (in 1603) as Apis. Edmund Halley changed the name to *Musca Apis* in 1679, while Nicholas Lacaille, who established the framework for southern hemisphere astronomy, called it *Musca Australis* on his 1752 star atlas. Today it is known simply as Musca. I have always been fascinated by this constellation, which, although small, harbours extraordinary objects and thus rightfully takes its place amongst the heavenly host.

The white beacon-star of Crux, Alpha Crucis, shows the way approximately 5.4 degrees south east to Beta Muscae, which was most probably seen by Lacaille as the insect's mouth. A double star, it consists of two shining white stars of 3.5 and 4th magnitude which are rather difficult to observe as the separation is only 1.4".

Continue to the north east of Beta Muscae towards Centaurus, where a number of planetary nebulae are to be found. **IC 4191** is 2.1 degrees to the north east of Beta Muscae. A 12-inch Schmidt-Cassegrain at 95x shows this stellar object located just north of two 11th mag stars.



The busy starfield is highlighted by HD 113919 about 9' south, a 6th magnitude star wearing an impressive orange cloak.



Herschel's "very strange object" sketched by Magda. Planetary nebula NGC 5189.

NGC 5189 is a showpiece planetary, about 3° north-east of IC 4191, bordering the constellation Circinus. John Herschel discovered this remarkable planetary nebula in 1835 and described it as "a very strange object". My first impression of this nebula, through a 16-inch Schmidt-Cassegrain at 127x, was that it showed a lot of detail with a relatively well-defined eastern part. This impressive planetary shows off a bright, curved bar in an east-west direction, which is well underlined to the north with a hazy inner south-eastern part. With higher power, splinter faint stars can be seen embedded in the flimsy arms of the nebula. The 7.1 magnitude white HD 117694 lies 6.5' off to the south. In general it seems that a bright star is associated with each object under discussion in Musca.

Move 2.6 degrees north-west to the double star **Theta Muscae,** which forms a triangle with NGC 5189 and IC 4191. The primary displays a blue-cream colour with the companion a slightly misty blue. Experience has taught me that when the colour of a double star needs discerning, first impressions are vital. The longer stars are observed, the fainter the colours appear to be. John Herschel was the first to determine a reliable measure of Theta Muscae, with no real change since.

The open star cluster **NGC 4815** is situated on the border between Musca and Centaurus, just 1.1° north-west of Theta Muscae. I cannot help but agree with Herschel concerning the strangeness of some deep sky objects. NGC 4815 is faint, relatively compact and stringy. At higher power (12-inch S/C, 218x) it shows a funny, slightly curved figure "2", facing west with approximately 20 stars involved.

Move a further three degrees due west, following the line along the Crux/Musca border to locate **NGC 4463** which is

bisected by the border of the two constellations. The stars in this grouping are very loose and show the shape of a north-pointing broken arrow, or a blunt arrow with drop-shoulders. The cluster is quite outstanding against the background starfield (12-inch S/C, 95x).

Another beautiful double star is **Zeta Muscae**, situated 2.6 degrees west of Beta Muscae. Zeta displays a soft creamy coloured primary with a pale orange companion.

Musca offers a rich harvest of lesser-known objects, recorded in catalogues such as the ESO, Harvard, Loden, Collinder, van den Berg Hagen and Ruprecht lists.

ESO 064-SC05 is situated only 18' south east of Zeta Musca. The grouping consists of approximately 15 stars, 11' in diameter, which amazingly, form the shape of a teaspoon. The handle string of three stars, which run out to the east, is slightly brighter than the cup, full of faint stars facing south. Surprisingly this cluster can also be seen through binoculars. **Havard 8** is situated between two planetary nebulae, about a third of the way from IC 4191 towards NGC 5189. The cluster consists of more or less a dozen stars between 11 and 12th mag in a dainty curly formation from north to south, about 5' in length. Situated to the west is a pair of close stars, part of the grouping rounding it off beautifully. 8th mag HD 115267 is situated 8.5' to the north.

To the south-west of 3.6 mag Lambda Muscae, on the way to Carina, a dark lane is visible under dark sky conditions against the busy star background. From my Alldays site, Tim Cooper observed this lane with 16x50 binoculars, extending for a little over 1 degree further in a southwest direction. It is straddled by two 6th mag stars, HD 100382 and HD 101162. For more on this dark lane, and observing tips for dark nebulae in general, see Auke Slotegraaf's website at [http://www.psychohistorian.org/astronomy/timsdarkneb.html].

NGC 4833 is the first of two remarkable globular clusters in Musca and is situated 43' north-northwest of delta Muscae (which marks the wing tip of the fly). My first impression of NGC 4833 is a faint small compact globular cluster, which reminds me of a comet-coma and tail. The globular cluster gradually brightens towards a rather broad compact centre, which is overwhelming. The spreading out of stars in a north western direction is reasonably apparent and drapes downs to a sharp south east point to form a triangle shape. With higher power (12-inch S/C, 218x) a lovely tight splash of condensed and gaseous faint stars reveals itself. Faint outliers can be seen with hints of dark lanes, more so in the western fringes of the cluster. This outstanding globular was discovered by Lacaille and included in his 1755 catalogue.

Blue-yellow Gamma Muscae highlights another jewel of a globular cluster, some

44' southwest. **NGC 4372** displays a large frosted round smudge, scattered and covered with fine frosted diamonds. With a 12-inch Schmidt-Cassegrain at 95x it is seen to host a mixed magnitude of stars, become gradually brighter to the middle. Within the northwest of the cluster is a lovely white 6th mag star, and it seems as if the star strings follow this bright white star, evoking the image of chicks following a mother-hen. To the west, visible in binoculars, another dark lane obscures the star field.

The two globular clusters NGC 4833 & NGC 4372, and the planetary nebula NGC 5189, were recorded in the Jack Bennett catalogue (as Nos. 56, 51 and 62 respectively). This list offers a challenge for a wonderful observing project – I urge you to try it! Contact the deep sky section director, Auke Slotegraaf, for details. Motivation can also be a challenge for the young of heart as is shown in a sketch by my grandchild, Chanté, who is only four years old. Of course it shows grandma and her telescope under the stars!

Object	Type	RA (J2000.0)	Dec	Mag	Size
Zeta Muscae	double star	$12^h22.1^m$	$-67^o31'$	5.2-10.6	32.4sep
ESO 064-SC05	open cluster	12 24.5	-68 28	—	10'
NGC 4372	globular cl.	12 25.8	-72 39	7.3	18'.6
NGC 4463	open cluster	12 30.0	-64 48	7.2	5'
NGC 4815	open cluster	12 58.0	-64 57	8.6	3'
NGC 4833	globular cl.	12 59.6	-70 53	7.0	13'.5
Theta Muscae	double star	13 08.1	-65 18	5.7-7.3	5.3sep
IC 4191	planetary neb.	13 08.8	-67 39	12.0	5'
Harvard 8	open cluster	13 18.2	-67 05	9.5	5'
NGC 5189	planetary neb.	13 33.5	-65 59	10.3	153"