M33 – The Pinwheel Galaxy

Image of M33 by Gordon Rogers, Long Crendon, Aylesbury, UK. 16-inch (40cm) Meade LX200 with f/6.3 focal reducer; SBIG ST10 CCD with A07 and CFW8. Image obtained on a stormy night during a gap of good seeing but under a three-quarter Moon. 20 min RGB binned 2×2. The luminance, unbinned, was curtailed by cloud after 30 minutes. 2003 January 20.

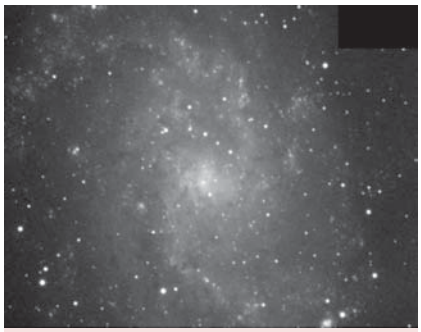


Image of M33 by Jeremy Shears, Bunbury, Cheshire, UK. Takahashi FS102, 102mm apochromatic refractor at f/8. Starlight Xpress MX716 CCD camera. 12×1 min stacked. 2004 October 4.

High overhead on autumn evenings is the small but distinctive constellation of Triangulum; a thin triangle of stars lying between Andromeda and Aries with the tip of the triangle pointing towards Pisces. A glance at any star atlas shows that Triangulum is rather devoid of deep sky objects, with the exception of one galaxy, the beautiful face-on spiral M33. M33, also catalogued as NGC 598, is a member of our local group of galaxies and is the third largest in the group after M31 (the great Andromeda spiral) and our own Milky Way. In fact M33 lies close to M31 and may be a satellite galaxy of it. It is considerably smaller than M31 and contains only one-tenth as many stars. In Edmund Hubble's galaxy classification scheme it is classed as a Sc spiral – very open spiral arms with a small central concentration. It can be found at RA 1h 33m 51s and Dec. +30° 39' 37" (2000.0) which puts it approximately 4.4 degrees west of α Trianguli, the star at the apex of the triangle.

M33 was discovered by Charles Messier in 1764. He noted that it shone with a whitish light of almost even brightness, a description that many modern observers using small telescopes would agree with. The great 19th century visual observer John Herschel remarked that it was only fit for low powers, being actually imperceptible from want of contrast at high powers. Again, a comment that many visual observers would understand. M33 has an integrated magnitude of 5.7 but because of its large size – almost twice that of the full Moon – its surface brightness is extremely low. This sometimes leads to confusion amongst newcomers to deep sky observing, who might find it an easy target in small binoculars, where it will appear as a large ghostly glow, but invisible in a telescope. Even from light-polluted suburbia I have seen M33 in 8×30 binoculars and from a dark site it can be a clear naked eye object.

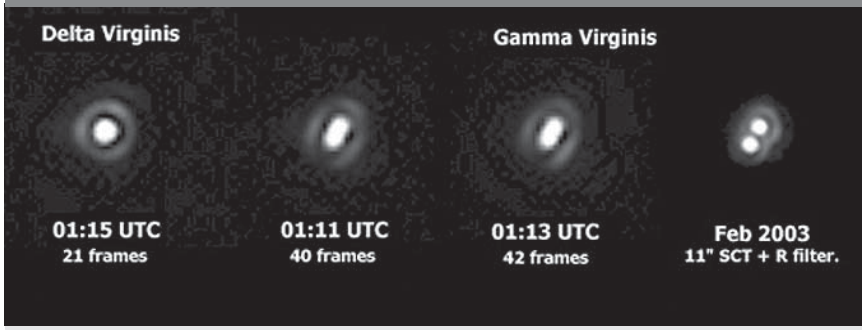
Two views of M33 from Deep Sky Section members Gordon Rogers and Jeremy Shears are shown here. The images are oriented with south up and east to the right. Because of the large size of the galaxy, neither of these images shows the full extent of the outer spiral arms. It is immediately obvious that the galaxy is speckled with bright star clusters and patches of nebulosity. These patches are HII regions in the spiral arms – areas of ionised hydrogen produced by hot young stars. Many of these have their own NGC number, the brightest being NGC 604 visible towards the bottom right hand side in these two images and easily seen in a large telescope on a good night.

Stewart L. Moore, *Director, Deep Sky Section*

Red planet rising

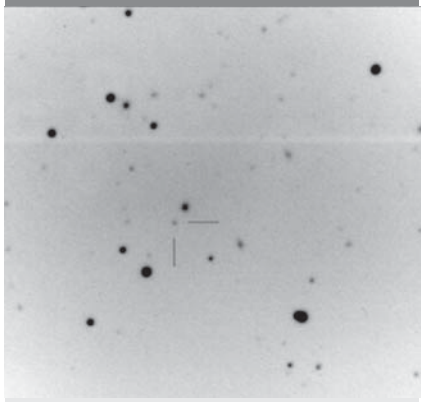
Martin Mobberley imaged Mars from Suffolk with his Orion Optics 245mm f/6.3 Newtonian at 03:36 UT on 2005 August 18, the last of five consecutive mornings with clear and stable conditions. ATiK HS + red and blue filters, seeing briefly good, transparency fair/poor (misty). *M. P. Mobberley.*

Porrima at periastron



Damian Peach imaged the well-known binary star Gamma Virginis (Porrima) on 2005 April 24 as it approached periastron (see the April *Journal,* page 107*).* The images above show the very elongated aspect of the star when compared to the nearby δ Virginis, and its decreased separation since 2003. 235mm SCT at f/42, Lumenera LU075M, green filter. *D. Peach.*

The tenth planet?



An image of the trans-Neptunian object 2003 UB313 at about mag 18.9, taken by Tom Boles on 2005 August 3.