Scootin’ thro’ Scutum

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Outline

1. Scutum in the sky
2. Origin of the name
3. Stellar Scutum
4. Dark Scutum
Scutum in the sky

- Scutum lies in the plane of the Milky Way, parallel to and just south of the Great Rift
- Bordered by Aquila to the north and Sagittarius to the south
- At 109 square degrees, its size ranks 84th of 88 constellations
- All of its stars are fainter than 3rd magnitude
- Seven stars with Bayer designations ($\alpha, \beta, \gamma, \delta, \epsilon, \eta, \zeta$)
- Flamsteed star numbers are sequential with Aquila (e.g., 1 Aquilae = $\alpha$ Sct)
Figure: SkyNews
Origin of Scutum

- Scutum is the “Shield”, formerly the “Sobieski’s Shield”
- Named in 1684 by Johannes Hevelius (1611-1687) for John III of Poland, named John III Sobieski
- It is the only constellation named for a real person
- It is the only “new” constellation proposed by Hevelius that became one of the modern 88
The Scutum Star Cloud is among the brightest patches of the Milky Way, rivaling those in Sagittarius (e.g., M24).

R Scuti is a pulsating variable star, max/min = 4.20/8.60, period = 146.5 d, MK class G/K supergiant, making it one of the largest and most luminous stars we know of; of type RV Tauri, has alternating deep and shallow minima; discovered in 1795 by Edward Pigott, making it one of the first variable stars known.

Herschel VI 50 is a binary pair, mag 6.2/8.2, 111 arcsec separation.

Struve 2391 is a binary pair, mag 6.5/9.6, 38 arcsec separation.

Basel 1 is an open cluster of faint stars starting at about 10th mag.
Figure: SkyNews
Wild Duck cluster

- discovered in 1681 by Gottfried Kirch of the Berlin Observatory
- Charles Messier entered it into his catalog in 1764
- named in 1844 by William Smyth (British admiral and influential amateur astronomer)
- an open cluster, a few hundred million years old
- apparent size $1/4^\circ$, distance 6,000 light years
- stars start at 6th mag, about 500 brighter than 14th mag
- lots of detail in both small and large apertures, at both low and high magnification
Dark Scutum

- Dark nebulae are interstellar collections of cold dense dust clouds, carbonate and silicate in composition, mostly settled in galactic mid-plane.
- The Barnard 111 complex includes two darker-than-dark clouds, B110 and B113.
- To see dark nebulae, one needs a wide field of view, to provide contrast between the dark nebula and its brighter surroundings, and optics that support high contrast.
- E.E. Barnard completed his catalog of 350 dark nebulae in 1927.
- Dark nebulae are rated by opacity on a scale of 1 to 6, with 6 being easiest to observe.
- Not labeled on the figure is B103 (opacity=6) between $\alpha$ and $\beta$ Scuti.
Figure: DSS2 (red; FOV=9deg) β Sct center top, α Sct bottom right
Of panning through the Milky Way, Garrett P. Serviss writes:

But, whether you use an opera-glass or a field-glass, do not fail to gaze long and steadily at this island of stars, for much of its beauty becomes evident only after the eye has accustomed itself to disentangle the glimmering rays with which the whole field of view is filled ... Look carefully all around this region and you will perceive that the old gods, who traveled this road (the Milky Way was sometimes called the path of the gods), trod upon golden sands. But do not imagine the thousands of stars that your opera-glass or field-glass reveals comprise all the riches of this Golconda of the heavens. You might ply the powers of the greatest telescope in a vain attempt to exhaust its wealth.

Serviss, “Astronomy with an opera glass” (1888)
List of sources


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SEDS: students for the exploration and development of space (www.seds.org, messier.seds.org)

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