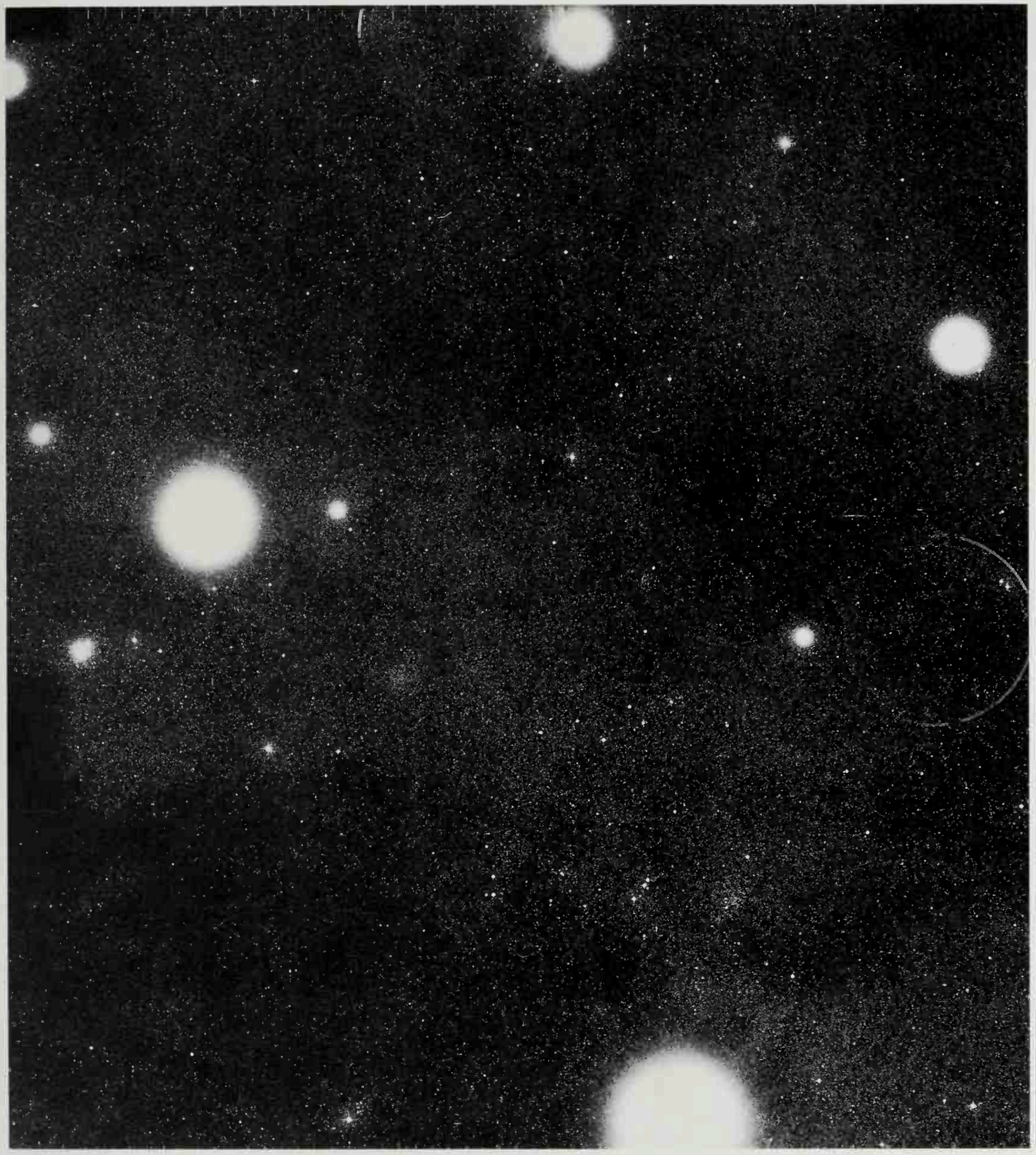

The Southern Cross. A star shines because its internal energy source is due to the annihilation of nuclear particles. The energy is immense because it follows the Einstein formula $E = mc^2$.

be used visually, such an instrument turns out to be a most powerful astronomical camera. This is not only because of its wide field but also because of its low focal ratio. As all photographers know, a lens opened up to aperture f/2·5 is faster than one at f/3·5; in fact, the shorter the exposure required the lower the focal ratio must be. Yet even the latest modern reflectors can never operate at lower than f/3·5, but Schmidts of f/2.5 are not uncommon. Another catadioptric type of reflector with a spherical primary and using a correcting lens at the front of a very short tube, is that designed by Dmitry Maksutov in the 1940s. First developed as a photographic telescope, it can also be used visually at f/7 and f/8 and is now favoured by some amateurs because of its extreme portability. Short tube lengths and fast focal ratios are only one aspect in the design of optical telescopes. Light-grasp necessitates a large aperture, and large aperture is also bound up with the vital question of resolution, since the power of a telescope to