

BLAZING SKY EFFECT AND OLBERS
PARADOX



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A NEW PERSPECTIVE BY K. STRANG

Blazing Sky Effect and Olbers Paradox

Mitigating in favour of the Big Bang is the Blazing Sky Effect – if the Universe were static and had no beginning then the skies would be illuminated by the light of all the stars (around 10^{24}) but instead the skies are black with pinpoints of light.

‘The Blazing Sky Effect was noticed by Kepler shortly after Galileo’s Sidereal Message had commented favourably on the notion that the Universe is unbounded. In his 1610 Conversations with the Sidereal Messenger, Kepler rejoined: “You do not hesitate to declare that there are visible over 10,000 stars . . . If this is true, and if [the stars have] the same nature as our sun, why do not these suns collectively outdistance our sun in brilliance? . . . But maybe the intervening ether obscures them? Not in the least . . . It is quite clear that . . . this world of ours does not belong to an undifferentiated swarm of countless others.” (Rosen 1965, pp 34-35)

This conclusion remained controversial, but the argument was not forgotten, witness the comment by Edmund Halley, in 1720, that: “Another Argument I have heard urged, that if the number of Fixt Stars were more than finite, the whole superficies of their apparent Sphere would be luminous.” Later this conclusion was discussed by De Cheseaux and J.H. Lambert, but cam to be credited to Gauss’s grat friend , Olbers.’ [The Fractal Geometry of Nature Benoit B. Mandelbrot, W. H. Freeman and Company 1977 p92]

This it is argued can be explained away (i) if the universe had a beginning around 14 billion years ago, the light from distant stars would not have had time to reach us and (ii) if the Universe is expanding the light from distant stars whould have stretched out into wavelengths outwith the visible spectrum.

However, Mandelbrot mentions various writers including Fournier D’Albe on various discussions of a fractal Universe:

‘They recognised that such universes “exorcise” geometrically the Blazing Sky Effect.’ [ibid p 91]

Something to think about.