

## SQM READINGS COMPARISON:

Note: The Unihedron SQM should be used under clear moonless skies for best accuracy. It is sensitive enough to be affected by the Milky Way, Zodiacal Light, and natural sky-glow. SQM readings are based on the following logarithmic scale:

$$\Delta Q = 1.0 = 2.512 \times \text{brightness, measured in M/arc-second}^2 \text{ (magnitudes per square arc-second squared)}$$

Higher numbers = darker sky. According to the Unihedron database, any reading higher than 21.0 is considered to be excellent conditions. The theoretical maximum reading of 22.0 is limited by natural sky-glow, and rarely seen anywhere on the planet. Following are some values for comparison:

Midtown Hong Kong (Dr. Constance Walker, NOAO) Q = 13.2  
Main Street USA in Disneyland (California) Q = 14.97  
Midtown Tucson, by Dan McKenna (instrumentation expert) Q = 18.5  
Suburban Tucson (Keith Schlottman, Xanadu Observatory) Q = 19.5  
Texas Star Party (Davis Mountains in west TX) Q = 21.76  
Full Moon up at Lowell Observatory (Brian Skiff, astronomer) Q = 18.0 – 18.5  
Best value for Lowell Observatory Q = 20.8  
Best value for Anderson Mesa Q = 21.8  
Fountain Hills, AZ (Gene Lucas, engineer) Q = 19.5  
Mount Wilson Q = 19.8  
Mount Palomar Q = 21.5  
Lick Observatory Q = 20.7  
Mount Lemmon Q = 21.5  
Mauna Kea Q = 21.75 (with Milky Way overhead Q = 21.66)

Readings at Heimhenge, New River, AZ (using Unihedron model SQM-L):

Nov 1, 2009, 6:45 pm, Full Moon rising, clear sky	T = 26.0 °C	Q = 18.50 (control)
Nov 5, 2009, 8:00 pm, no Moon, clear sky	T = 26.0 °C	Q = 21.10
Jan 4, 2010, 7:30 pm, no Moon, clear sky	T = 24.0 °C	Q = 20.30
Aug 9, 2013, 1:00 am, no Moon, clear sky	T = 25.0 °C	Q = 20.90
Oct 25, 2014, 10:00 pm, no Moon, clear sky	T = 25.5 °C	Q = 20.61
Jun 7, 2015, 11:00 pm, no Moon, clear sky	T = 23.5 °C	Q = 20.83
Apr 2, 2016, 11:45 pm, no Moon, light haze	T = 22.5 °C	Q = 20.75
Nov 30, 2016, 12:30 am, no Moon, clear sky	T = 7.2 °C	Q = 20.85
Nov 11, 2017, 8:00 pm, no Moon, light haze	T = 21.0 °C	Q = 20.42
Dec 14, 2017, 2:00 am, no Moon, clear sky	T = 19.0 °C	Q = 20.82
Nov 1, 2018, 11:30 pm, no Moon, clear sky	T = 23.0 °C	Q = 20.57
Apr 21, 2020, 11:30 pm, no Moon, light haze	T = 23.0 °C	Q = 20.82
Oct 22, 2020, 11:00 pm, no Moon, clear sky	T = 23.0 °C	Q = 20.70

Heimhenge average to date: Q = 20.70