

Orion in the Peak 2011

In early 2011, the Peak District National Park Authority asked members of the public to measure how light pollution impacts the darkness of the night sky in its project 'Orion in the Peak'. Participants were given instructions on how to compare the constellation of Orion (the Hunter) with a series of star charts, and then asked to return their results for analysis via the Authority's website.

In total, 201 people responded to the project, in 172 different postcode areas, allowing for the Authority's Research Team to produce a map of night sky quality in and around the Peak District National Park; a summary of the results of the project is provided below.

- Each star chart was numbered from 1 (most affected by light pollution) to 6 (least affected by light pollution) with the numbering system corresponding to limiting visual magnitude¹
- Data were returned for
 - 40 postcode areas within the National Park, with an average sky quality of 4.5
 - 96 postcode areas within the National Park (plus 5km buffer region), with an average sky quality of 4.0
 - 132 postcode areas outside the National Park, with an average sky quality of 3.5
 - 76 postcode areas outside the National Park (plus 5km buffer region), with an average sky quality of 3.4
- Of the postcode areas for which data were returned
 - 80% within the National Park had a sky quality of 4.0 or above
 - 51% outside the National Park had a sky quality of 4.0 or above
- The difference in sky quality between the observations made inside and outside the National Park was 1.0, corresponding to approximately
 - a 2.5 times brighter sky outside the National Park
 - 600 more stars visible in the sky within the National Park²
- The best results within the National Park were recorded at Monyash in the White Peak, and Edale in the Dark Peak, which both had a sky quality of 6.0

The Peak District National Park Authority is again asking members of the public, between 16 February and 23 February, to measure how light pollution impacts the darkness of the night sky. More information can be found on our website <http://www.peakdistrict.gov.uk/darkskies>

¹ Limiting visual magnitude is a measure of the brightness of the faintest star than can be seen by an observer under normal conditions.

² Estimated using "Astrophysical Quantities" by Allen (see <http://goo.gl/hF6er>)

Raw Data

Total number of responses: 201
Responses providing useable data: 198
Number of individual postcode areas: 172

Postcode areas inside National Park: 40
Average result inside National Park: 4.3

Postcode areas inside National Park (plus 5km buffer region): 96
Average result inside National Park (plus 5km buffer region): 4.0

Postcode areas outside National Park: 132
Average result outside National Park: 3.5

Postcode areas outside National Park (plus 5km buffer region): 76
Average result outside National Park (plus 5km buffer region): 3.4

Stars visible inside National Park: 910²
Stars visible outside National Park: 296²

Sky Quality	Number of postcode areas <i>inside</i> National Park	Number of postcode areas <i>outside</i> National Park
1	0	1
2	2	15
3	6	49
4	12	45
5	18	21
6	2	1