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Add Health Wave IV Sunset Data Documentation



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Introduction

These data present average sunset time over the course of the year for the respondent's Census block group. The United States Naval Observatory (USNO) Astronomical Applications Department (AAD) maintains a database of solar and lunar information for locations across the globe. Users can input latitude and longitude coordinates and time zone information to retrieve the sunset time (along with other solar and lunar information) for any date between 1700 and 2100.¹ The USNO database was used to create a dataset of sunset times for every day of each survey year for latitude/longitude coordinates at each census block group's center of population.² Centroids were calculated using the most recent past Census (i.e., 2000 for Wave IV). Interested readers can see an example of implementation of the solar/lunar algorithms on GitHub at: https://github.com/jshrader/astronomical_algorithms. The daily sunset times were averaged to create a single, annual average sunset time. Data are available for Waves I, III, and IV.

Data Structure and Form

The file consists of the variable w4ssbg00, which reports decimal hours after 12:00 noon (e.g., a value of 7.0 represents a sunset time of 19:00 or 7:00 PM, and a value of 9.5 represents a sunset of 21:30 or 9:30 PM). A single value is presented for each respondent (by aid) per wave, based on the centroid of the respondent's Census block group during that wave.

Missing codes

The missing code of 98 denotes respondents in Add Health who lack the geocodes necessary for merging respondent locations to the source data.

Data Dictionary

Name	Wave	Description	Observations	Range
W4ssbg00	IV	Annual average sunset time for respondent's block group, using year 2000 Census block group centroids	15,685	16.22 -21.73

Notes

Users should use caution in examining data. The aforementioned algorithms are only valid at certain latitude/longitude combinations. Additionally, some locations do not experience sunrise/sunset during certain portions of the year (i.e., Polar Night and Midnight Sun).

Source Description

1. United States Naval Observatory Astronomical Applications Department. Complete Sun and Moon Data for One Day. http://aa.usno.navy.mil/data/docs/RS_OneDay.php#formb). Published March 8, 2016. Accessed June 13, 2016.
2. United States Census Bureau. Centers of Population. Geography. <https://www.census.gov/geo/reference/centersofpop.html>. Published 2010. Accessed November 25, 2015.