

NASA GLOBE CLOUD GAZE Data Description

NASA GLOBE CLOUD GAZE is a collaboration between two giants of citizen science: The GLOBE Program and The Zooniverse online citizen science platform. The project uses sky photographs taken by participants in the GLOBE Program. These photographs run through two separate interactives on the project to collect information on the amount of cloud cover and cloud types present in each photograph. Results from these two interactives are based on an agreement value selected between the citizen scientists analyzing the photographs.

Participants select the best option and can only select one option from the list. The photograph is seen by participants until it is retired. The photograph can reach consensus or meet a predetermined classification count.

Consensus: when all participants that analyzed the photograph agree

Classification count: when 8 participants or 80% of those that classified the photograph agreed on the result

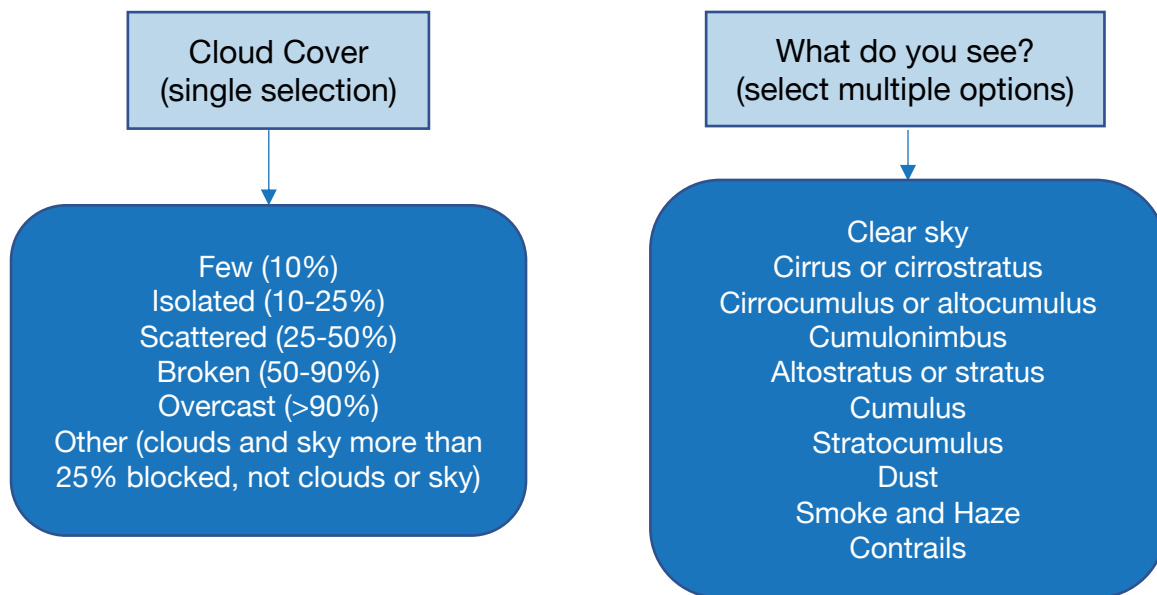


Figure 1: Simple description of two available interactives on NASA GLOBE CLOUD GAZE.

***Note about What Do You See? interactive:** Each category will have information about the agreement between citizen scientists for each photograph, taken in each cardinal direction as well as upward.

Appendix A: Summary of Cloud Cover Data Variables

***Note:** The image URL, Most Likely, Agreement, Classification Count, and Retirement values are available for each photograph. The direction of the photograph will be found added to the titles of these variables.

Variable	Units	Definition
Observation Number	string	Observation ID is a unique observation identifier within GLOBE
Measurement Date (UTC)	YYYY-MM-DD	Date image was taken in Coordinated Universal Time (UTC)
Measurement Time (UTC)	HH:MM:SS	Time image was taken in Coordinated Universal Time (UTC)
Observation Latitude	decimals degree north	Latitude where the image was taken. Range [-90, 90] (i.e.,)
Observation Longitude	decimals degrees east	Longitude where the image was taken. Range [-180, 180]
(N,S,E,W,Up) Image URL	link	URL link to image taken in each cardinal direction and up
(N,S,E,W,Up) Most Likely	integer	Cloud cover consensus from Zooniverse CLOUD GAZE system for that direction. 0 = Few or > 10% 1 = Isolated or 10%-25% 2 = Scattered or 25-50% 3 = Broken or 50-90% 4 = Overcast or > 90% 5 = Other category
(N,S,E,W,Up) Agreement	integer	Level of confidence for that direction's Most Likely value. (range 0-1) $\text{Agreement} = \frac{\text{Total number of votes for one option}}{\Sigma \text{ All observations for that photograph}}$
(N,S,E,W,Up) Classification Count	integer	Number of citizen scientists who classified the image
(N,S,E,W,Up) Retirement	consensus or classification count	The reason for retirement either due to consensus or classification count

Appendix B: Summary of What Do You See Data Variables

***Note:** Each photograph (each cardinal direction and upward) will have true/false values for each possible category. For each direction (cardinal directions and upward) the retirement information (most Likely, agreement, classification count, and retirement values) are printed. The direction of the photograph will be found added to the titles of these variables. Values of “other” refer to images where cloud cover could not be categorized. These are images blocked by trees or buildings (25% or more), is of the inside of a room or building, or was taken at night

Categories: clear sky, cirrus or cirrostratus, cirrocumulus or altocumulus, altostratus or stratus, stratocumulus, cumulus, cumulonimbus, contrails, smoke or haze, dust

Variable	Units	Definition
Observation Number	string	Observation ID is a unique observation identifier within GLOBE
Measurement Date (UTC)	YYYY-MM-DD	Date image was taken in Coordinated Universal Time (UTC)
Measurement Time (UTC)	HH:MM:SS	Time image was taken in Coordinated Universal Time (UTC)
Observation Latitude	decimals degree north	Latitude where the image was taken. Range [-90, 90] (i.e.,)
Observation Longitude	decimals degrees east	Longitude where the image was taken. Range [-180, 180]
(N,S,E,W,Up) Image URL	link	URL link to image taken in each cardinal direction and up.
Clearsky (N,S,E,W,Up)	integer	0, 1 or 5 (cloud type not classified – other)
Cirrus or Cirrostratus (N,S,E,W,Up)	integer	0, 1 or 5 (cloud type not classified – other)
Cirrocumulus or altocumulus (N,S,E,W,Up)	integer	0, 1 or 5 (cloud type not classified – other)
Altostratus or stratus (N,S,E,W,Up)	integer	0, 1 or 5 (cloud type not classified – other)
Stratocumulus (N,S,E,W,Up)	integer	0, 1 or 5 (cloud type not classified – other)
Cumulus (N,S,E,W,Up)	integer	0, 1 or 5 (cloud type not classified – other)

Cumulonimbus (N,S,E,W,Up)	integer	0, 1 or 5 (cloud type not classified – other)
Contrails (N,S,E,W,Up)	integer	0, 1 or 5 (cloud type not classified – other)
Smoke or Haze (N,S,E,W,Up)	integer	0, 1 or 5 (cloud type not classified – other)
Dust (N,S,E,W,Up)	integer	0, 1 or 5 (cloud type not classified – other)
Most Likely (N,S,E,W,Up)	integer	Cloud types and atmospheric events consensus from Zooniverse CLOUD GAZE system for that direction
Agreement (N,S,E,W,Up)	integer	Level of confidence for that direction's Most Likely value (range 0-1) $\text{Agreement} = \frac{\text{Total number of votes for one option}}{\Sigma \text{ All observations for that photograph}}$
Classification Count (N,S,E,W,Up)	integer	Number of citizen scientists who classified the image
Retirement (N,S,E,W,Up)	consensus or classification count	The reason for retirement either due to consensus or classification count