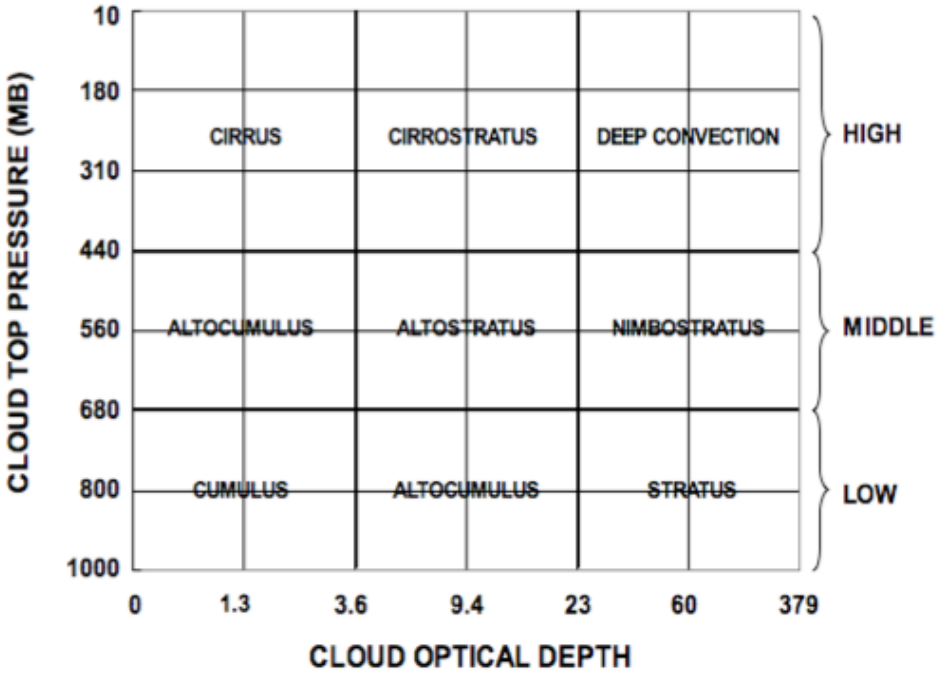
Clouds and the Earth's Radiant Energy System (CERES) Monthly Gridded Cloud Averages (ISCCP-D2like-GEO) Data Set Abstract

Table of Contents:

- Data Set Description
- Summary of Changes
- References
- Contact Information
- Acknowledgement
- Reference
- Document Information

Data Set Description:

The Monthly Gridded Cloud Averages (ISCCP-D2like-GEO) archival data product contains monthly and monthly 3-hourly (GMT-based) 1°×1° gridded regional mean geostationary satellite (GEO) cloud properties as a function of 18 cloud types, similar to the ISCCP D2 product, where the cloud properties are stratified by pressure, optical depth, and phase. The ISCCP-D2like-GEO product is a 5-satellite, daytime 3-hourly GMT, 8-km nominal resolution, geostationary-only cloud product limited to 60°N to 60°S. The ISCCP-D2like-GEO is a daytime-only product, where the cloud retrievals incorporate only the visible and IR channels common to all geostationary satellites for spatial consistency. The GEO cloud properties are from the same source as for those in the SYN1deg product; however, they are not temporally interpolated. The Gridded GEO Narrowband Radiances (GGEO) data product is the input to this product. Each ISCCP-D2like-GEO file covers a single month.



The stratification of the 9 (thick lines, large blocks) and 42 (thin lines, small blocks) cloud types as a function of cloud top pressure and cloud optical depth. The cloud type names are given for the 9 cloud types. The 42 cloud types are not available in the ISCCP-D2like-GEO product.

List of cloud properties available as a function of ISCCP-D2like product.
The 42 cloud type format is not available for either the GEO or Mrg products.

	9 cloud types			42 cloud types		
Cloud Property	**Day/Nit**	**GEO**	**Mrg**	**Day/Nit**	**GEO**	**Mrg**
Total Cloud Fraction	X	X	X	X		
Liquid Cloud Fraction	X	X	X	X		
Ice Cloud Fraction	X	X	X	X		
Effective Temperature	X	X	X			
Effective Pressure	X	X	X			
Optical Depth	X	X	X			
LWP (Liquid Water Path) IWP (Ice Water Path)	X	X	X			
Particle Size	X					
IR Emissivity	X					

Additional information about the format and content of the ISCCP-D2like-GEO product can be found in the CERES Data Products Catalog. Information about the quality of the content of the ISCCP-D2like-GEO product can be found in the Data Quality Summary.

Summary of Changes:

The CERES Data Management Team and the Langley Atmospheric Science Data Center (ASDC) use a Sampling Strategy, a Production Strategy, and a Configuration Code (CCode) to track versions of CERES primary data products. In general, minor reprocessing changes are tracked by increasing the Configuration Code while major reprocessing changes result in a new Production Strategy. The Sampling Strategy identifies the satellite and instruments that acquired the data in the product.

A summary of changes made to the CERES ISCCP-D2like-GEO product is shown in the following table.

Modification History of the CERES ISCCP-D2like-GEO Product

Sampling Strategy and Production Strategy	CCode	Available at ASDC	Impact on ISCCP-D2like Product
GEO_DAY_Edition3A [4]	300300	Nov 2013	• No overall change from Edition2A. • Edition2A GGEO/GGEOW data are used as input
GEO_Composite_Edition2A [4]	024032	Feb 2010	• Optical depth calculations were corrected to eliminate error. • HDF product format was changed to the same format as ISCCP-D2likeDay/Nit product. • Edition2A GGEO/GGEOW data are used as input
GEO_Composite_Beta1 [3]	023031	Oct 2008	• Edition2A GGEO data are used as input

Availability: (1) not available; (2) restricted to CERES analysts; (3) restricted to CERES Science Team and analysts; (4) public

References:

The first reference explains the cloud optical depth gamma distribution assumption. The second reference outlines the GGEO cloud retrieval Layered Bispectral Threshold Model (LBTM) algorithm, which is a subset of the MODIS algorithm.

1. Kato, S.; Rose, F. G.; Charlock, T. P.; 2005: Computation of Domain-Averaged Irradiance Using Satellite-Derived Cloud Properties. *J. Atmos. Oceanic Technol.*, **22**, pp 146-164.

2. Minnis, P.; Smith, W. L., Jr.; Garber, D. P.; Ayers, J. K.; and Doelling, D. R.: Cloud Properties Derived From GOES-7 for the Spring 1994 ARM Intensive Observing Period Using Version 1.0.0 of the ARM Satellite Data Analysis Program. *NASA RP 1366*, August 1995, 59 pp.

Contact Information:

Investigator(s) Name and Title	Technical Contact(s)	Data Center
Norman G. Loeb CERES Interdisciplinary Principal Investigator E-mail: norman.g.loeb@nasa.gov Telephone: (757) 864-5688	David R. Doelling E-mail: david.r.doelling@nasa.gov Telephone: (757) 864-2155 Atmospheric Sciences Research Mail Stop 420 NASA Langley Research Center Hampton, Virginia 23681-2199 USA FAX: (757) 864-7996	User and Data Services Office Atmospheric Science Data Center NASA Langley Research Center Mail Stop 157D Hampton, Virginia 23681-2199 USA Telephone: (757) 864-8656 FAX: (757) 864-8807 E-mail: support-asdc@earthdata.nasa.gov URL: https://eosweb.larc.nasa.gov

Acknowledgement:

The requested form of acknowledgment for any publication in which these data are used is:

"These data were obtained from the NASA Langley Research Center Atmospheric Science Data Center."

The Langley Data Center requests a reprint of any published papers or reports or a brief description of other uses (e.g., posters, oral presentations, etc.) of data that we have distributed. This will help the Data Center determine the use of data distributed, which is helpful in optimizing product development. It also helps us to keep our product related references current.

Reference:

The CERES Team has made considerable efforts to remove major errors and to verify the quality and accuracy of these data. Please provide a reference to the following paper when you publish scientific results with the CERES data:

Wielicki, B. A., B. R. Barkstrom, E. F. Harrison, R. B. Lee III, G. L. Smith, and J. E. Cooper, "Clouds and the Earth's Radiant Energy System (CERES): An Earth Observing System Experiment," *Bull. Amer. Meteor. Soc.*, **77**, 853-868, 1996.

Document Information:

- Document Creation Date: October 10, 2008
- Review Date: Nov 2013
- Modification History: Jul 2012, Nov 2013
- Last Date Modified: Nov 8, 2013
- Document ID:
- Author: User and Data Services, Langley ASDC

ASDC Help Desk: Phone (757) 864-8656; E-mail: support-asdc@earthdata.nasa.gov