

	Mean	Standard_Deviation	Minimum	Maximum	QA_Mean	QA_Standard_Deviation	Histogram_Counts (n)	Confidence_Histogram (4) (Fraction)	Pixel_Counts	Mean_Uncertainty	Log_Mean_Uncertainty	Log_Mean	Log_Standard_Deviation	JHisto_vs_Opt_Depth (nxn)	JHisto_vs_Eff_Radius (nxn)	JHisto_vs_Eff_Radius_16 (nxn)	JHisto_vs_Eff_Radius_37 (nxn)	JHisto_vs_Temperature (nxn)	JHisto_vs_Emissivity (nxn)	JHisto_vs_Pressure (nxn)
01. Deep_Blue_Aerosol_Optical_Depth_Land	•	•	•	•			•													
02. Deep_Blue_Aerosol_Optical_Depth_550_Land	•	•	•	•			•													
03. Deep_Blue_Angstrom_Exponent_Land	•	•	•	•			•													
04. Deep_Blue_Single_Scattering_Albedo_Land (3)	•	•	•	•			•													
05. Deep_Blue_Number_Pixels_Used_550_Land	•	•	•	•			•													
06. AOD_550_Dark_Target_Deep_Blue_Combined	•	•	•	•			•													

Derived from L2 Water Vapor (05_L2)

01. Water_Vapor_Near_Infrared_Clear	•	•	•	•			•													
02. Water_Vapor_Near_Infrared_Cloud	•	•	•	•			•													

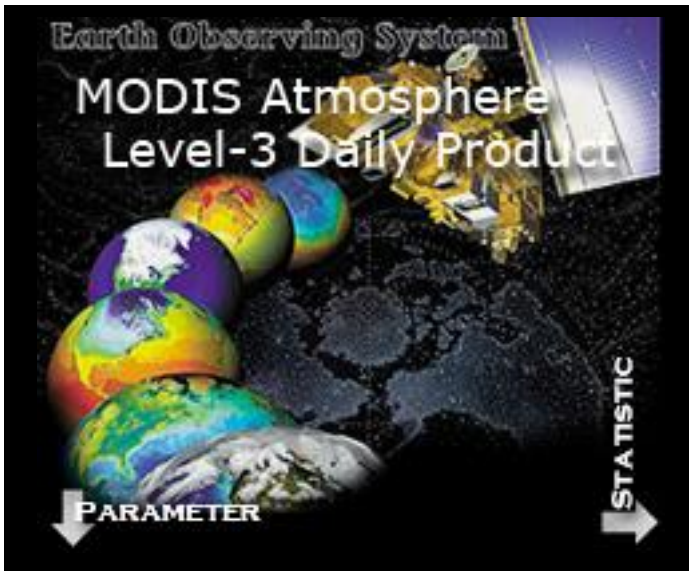
Derived from L2 Cloud (06_L2)

Cirrus Detection

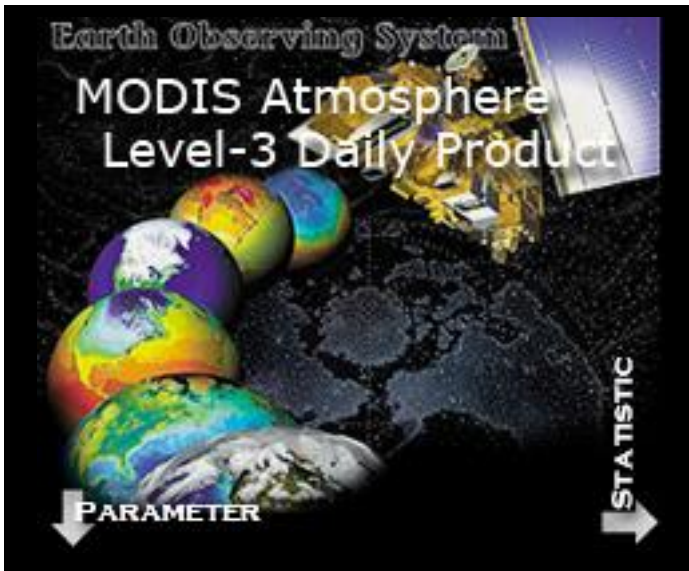
01. Cirrus_Reflectance	•	•	•	•			•													
02. Cirrus_Fraction_SWIR									•	•										

Cloud Top Properties [Nadir:SensorZA≤32° Day:SolarZA≤85°]

01. Cloud_Top_Pressure [L/M/H Histograms at 10 intervals]	•	•	•	•			•			•										•
02. Cloud_Top_Pressure_Day [°]	•	•	•	•			•			•										•
03. Cloud_Top_Pressure_Night [°]	•	•	•	•			•			•										•
04. Cloud_Top_Pressure_Nadir [L/M/H Histograms at 10 intervals]	•	•	•	•			•			•										
05. Cloud_Top_Pressure_Nadir_Day [°]	•	•	•	•			•			•										
06. Cloud_Top_Pressure_Nadir_Night [°]	•	•	•	•			•			•										
07. Cloud_Top_Temperature [L/M/H JHisto 20x3]	•	•	•	•						•										•
08. Cloud_Top_Temperature_Day [L/M/H JHisto 20x3]	•	•	•	•						•										•
09. Cloud_Top_Temperature_Night [L/M/H JHisto 20x3]	•	•	•	•						•										•
10. Cloud_Top_Temperature_Nadir [L/M/H JHisto 20x3]	•	•	•	•						•										•
11. Cloud_Top_Temperature_Nadir_Day [°]	•	•	•	•						•										•
12. Cloud_Top_Temperature_Nadir_Night [°]	•	•	•	•						•										•
13. Cloud_Effective_Emissivity [L/M/H JHisto 11x10]	•	•	•	•						•										•
14. Cloud_Effective_Emissivity_Day [°]	•	•	•	•						•										•
15. Cloud_Effective_Emissivity_Night [°]	•	•	•	•						•										•
16. Cloud_Effective_Emissivity_Nadir [L/M/H JHisto 11x10]	•	•	•	•						•										•



	Mean	Standard_Deviation	Minimum	Maximum	QA_Mean	QA_Standard_Deviation	Histogram_Counts (n)	Confidence_Histogram (4) (Fraction)	Pixel_Counts	Mean_Uncertainty	Log_Mean_Uncertainty	Log_Mean	Log_Standard_Deviation	JHisto_vs_Opt_Depth (nxn)	JHisto_vs_Eff_Radius (nxn)	JHisto_vs_Eff_Radius_16 (nxn)	JHisto_vs_Eff_Radius_37 (nxn)	JHisto_vs_Temperature (nxn)	JHisto_vs_Emissivity (nxn)	JHisto_vs_Pressure (nxn)
17. Cloud_Effective_Emissivity_Nadir_Day [°]	•	•	•	•					•											•
18. Cloud_Effective_Emissivity_Nadir_Night [°]	•	•	•	•					•											•
19. Cloud_Fraction [L/M/H JHisto 12x10]	•	•	•	•					•											•
20. Cloud_Fraction_Day [°]	•	•	•	•					•											•
21. Cloud_Fraction_Night [°]	•	•	•	•					•											•
22. Cloud_Fraction_Nadir [L/M/H JHisto 12x10]	•	•	•	•					•											•
23. Cloud_Fraction_Nadir_Day [°]	•	•	•	•					•											•
24. Cloud_Fraction_Nadir_Night [°]	•	•	•	•					•											•
25. Cloud_Top_Height [L/M/H JHisto 18x3]	•	•	•	•																•
26. Cloud_Top_Height_Day [°]	•	•	•	•																•
27. Cloud_Top_Height_Night [°]	•	•	•	•																•
28. Cloud_Top_Height_Nadir [L/M/H JHisto 18x3]	•	•	•	•					•											•
29. Cloud_Top_Height_Nadir_Day [°]	•	•	•	•					•											•
30. Cloud_Top_Height_Nadir_Night [°]	•	•	•	•					•											•
31. Cirrus_Fraction_Infrared [denom. includes clear sky in C6]									•	•										
32. High_Cloud_Fraction_Infrared [denom. includes clear]									•	•										
33. Cloud_Phase_Infrared						•														
34. Cloud_Phase_Infrared_Day						•												D		•
35. Cloud_Phase_Infrared_Night						•												D		•
36. Cloud_Top_Pressure_1km_Nadir_Day [sample vs. avg.]																				•
37. Cloud_Top_Pressure_1km_Nadir_Night [sample vs. avg.]																				•
38. Sunlint_Fraction_Day [daytime only phenomenon]									•	•										
39. Snow_Fraction_Spectral_Under_Thin_Clouds_Day									•	•										
40. Snow_Fraction_Ancillary_Under_All_Clouds_Night									•	•										
41. Ocean_Fraction_Day									•	•										
42. Ocean_Fraction_Night									•	•										
43. Coast_Fraction_Day									•	•										
44. Coast_Fraction_Night									•	•										
45. Desert_Fraction_Day									•	•										
46. Desert_Fraction_Night									•	•										
47. Land_Fraction_Day									•	•										



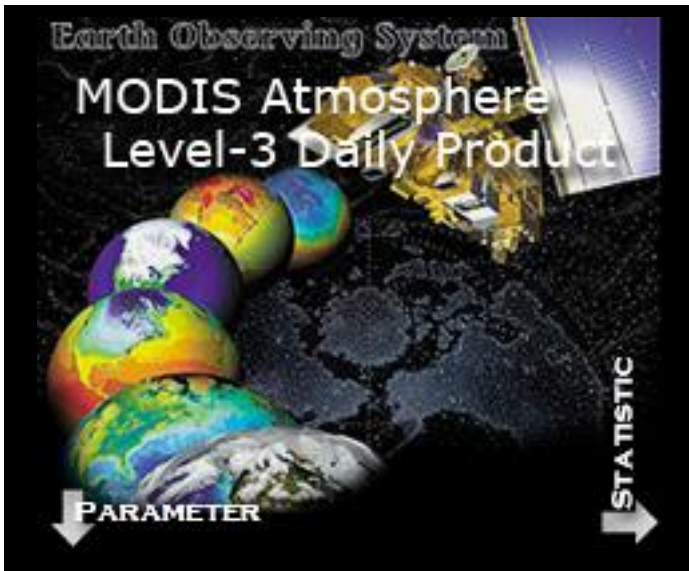
Mean	Standard_Deviation	Minimum	Maximum	QA_Mean	QA_Standard_Deviation	Histogram_Counts (n)	Confidence_Histogram (4)	(Fraction)	Pixel_Counts	Mean_Uncertainty	Log_Mean_Uncertainty	Log_Mean	Log_Standard_Deviation	JHisto_vs_Opt_Depth (nxn)	JHisto_vs_Eff_Radius (nxn)	JHisto_vs_Eff_Radius_16 (nxn)	JHisto_vs_Eff_Radius_37 (nxn)	JHisto_vs_Temperature (nxn)	JHisto_vs_Emissivity (nxn)	JHisto_vs_Pressure (nxn)	

48. Land_Fraction_Night

Cloud Optical Properties [PCL:Partly Cloudy Day:SolarZA<81.3731°]

(Primary 2.1 Retrieval) D = SDS in D3 only (not in E3/M3)

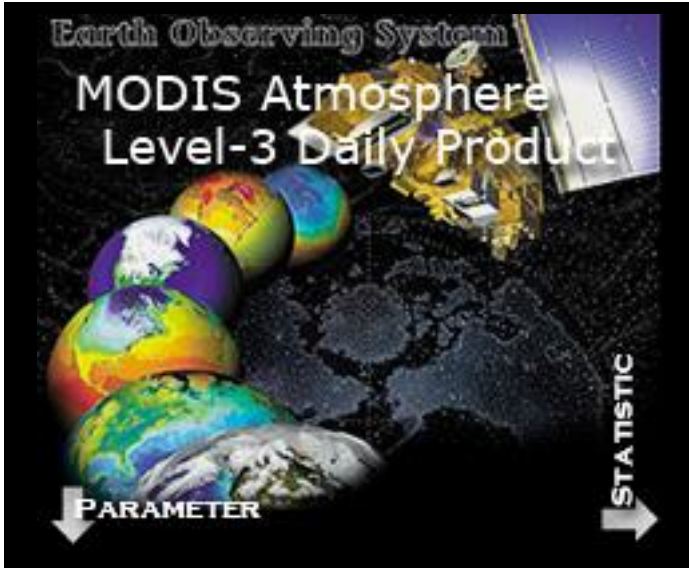
01. Cloud_Optical_Thickness_Liquid	•	•	•	•			•			•	•	•	•					•			•
02. Cloud_Optical_Thickness_Ice	•	•	•	•			•			•	•	•	•					•		D	•
03. Cloud_Optical_Thickness_Undetermined	•	•	•	•								•	•								
04. Cloud_Optical_Thickness_Combined	•	•	•	•								•	•								
05. Cloud_Optical_Thickness_PCL_Liquid	•	•	•	•			•			•								•			
06. Cloud_Optical_Thickness_PCL_Ice	•	•	•	•			•			•								•			
07. Cloud_Optical_Thickness_PCL_Undetermined	•	•	•	•																	
08. Cloud_Optical_Thickness_PCL_Combined	•	•	•	•																	
09. Cloud_Optical_Thickness_ISCCP ⁸																					•
10. Cloud_Optical_Thickness_PCL_ISCCP ⁸																					•
11. Cloud_Effective_Radius_Liquid	•	•	•	•			•			•								•			D
12. Cloud_Effective_Radius_Ice	•	•	•	•			•			•								•			D
13. Cloud_Effective_Radius_Undetermined	•	•	•	•																	
15. Cloud_Effective_Radius_PCL_Liquid	•	•	•	•			D			•											
16. Cloud_Effective_Radius_PCL_Ice	•	•	•	•			D			•											
17. Cloud_Effective_Radius_PCL_Undetermined	•	•	•	•																	
18. Cloud_Water_Path_Liquid	•	•	•	•			•			•											
19. Cloud_Water_Path_Ice	•	•	•	•			•			•											
20. Cloud_Water_Path_Undetermined	•	•	•	•																	
22. Cloud_Water_Path_PCL_Liquid	•	•	•	•			•			•											
23. Cloud_Water_Path_PCL_Ice	•	•	•	•			•			•											
24. Cloud_Water_Path_PCL_Undetermined	•	•	•	•																	
25. Cloud_Phase_Optical_Properties [L, I, U][Cld+PCL][S+F]																					•
26. COP_Phase_Cloudy [3 cats: Liq, Ice, Undet] CSR=0 [Succ+Fail]							D														
27. COP_Phase_Partly_Cloudy [Liq, Ice, Undet] CSR=1,3 [S+F]							D														
28. COP_Phase_CloudMaskClear [Cloud Mask Clear] CSR=0							D														
29. COP_Phase_RestoredToClear [Restored To Clear] CSR=2							D														



	Mean	Standard_Deviation	Minimum	Maximum	QA_Mean	QA_Standard_Deviation	Histogram_Counts (n)	Confidence_Histogram (4) (Fraction)	Pixel_Counts	Mean_Uncertainty	Log_Mean_Uncertainty	Log_Mean	Log_Standard_Deviation	JHisto_vs_Opt_Depth (nxn)	JHisto_vs_Eff_Radius (nxn)	JHisto_vs_Eff_Radius_16 (nxn)	JHisto_vs_Eff_Radius_37 (nxn)	JHisto_vs_Temperature (nxn)	JHisto_vs_Emissivity (nxn)	JHisto_vs_Pressure (nxn)
01. Cloud_Optical_Thickness_1621_Liquid ⁶	•	•	•	•			•			•					•					
02. Cloud_Optical_Thickness_1621_Ice ⁷	•	•	•	•			•			•					•					
03. Cloud_Effective_Radius_1621_Liquid	•	•	•	•			•			•										
04. Cloud_Effective_Radius_1621_Ice	•	•	•	•			•			•										
05. Cloud_Water_Path_1621_Liquid	•	•	•	•			•			•										
06. Cloud_Water_Path_1621_Ice	•	•	•	•			•			•										
07. Cloud_Retrieval_Fraction_1621_Liquid [denom incl. fail]									•	•										
08. Cloud_Retrieval_Fraction_1621_Ice [denom incl. fail]									•	•										
09. Cloud_Optical_Thickness_1621_PCL_Liquid ⁶	•	•	•	•			•			•					•					
10. Cloud_Optical_Thickness_1621_PCL_Ice ⁷	•	•	•	•			•			•					•					
11. Cloud_Effective_Radius_1621_PCL_Liquid	•	•	•	•			•			•										
12. Cloud_Effective_Radius_1621_PCL_Ice	•	•	•	•			•			•										
13. Cloud_Water_Path_1621_PCL_Liquid	•	•	•	•			•			•										
14. Cloud_Water_Path_1621_PCL_Ice	•	•	•	•			•			•										
15. Cloud_Retrieval_Fraction_1621_PCL_Liquid									•	•										
16. Cloud_Retrieval_Fraction_1621_PCL_Ice									•	•										

(Supplementary 1.6 Retrieval)

01. Cloud_Optical_Thickness_16_Liquid	•	•	•	•			D			•								D		
02. Cloud_Optical_Thickness_16_Ice	•	•	•	•			D			•								D		
03. Cloud_Effective_Radius_16_Liquid	•	•	•	•			•			•				•			D	D		
04. Cloud_Effective_Radius_16_Ice	•	•	•	•			•			•				•			D	D		
05. Cloud_Water_Path_16_Liquid	•	•	•	•			•			•										
06. Cloud_Water_Path_16_Ice	•	•	•	•			•			•										
07. Cloud_Retrieval_Fraction_16_Liquid									•	•										
08. Cloud_Retrieval_Fraction_16_Ice									•	•										
09. Cloud_Optical_Thickness_16_PCL_Liquid	•	•	•	•			D			•								D		
10. Cloud_Optical_Thickness_16_PCL_Ice	•	•	•	•			D			•								D		
11. Cloud_Effective_Radius_16_PCL_Liquid	•	•	•	•			•			•				•			D	D		
12. Cloud_Effective_Radius_16_PCL_Ice	•	•	•	•			•			•				•			D	D		
13. Cloud_Water_Path_16_PCL_Liquid	•	•	•	•			•			•										
14. Cloud_Water_Path_16_PCL_Ice	•	•	•	•			•			•										



	Mean	Standard_Deviation	Minimum	Maximum	QA_Mean	QA_Standard_Deviation	Histogram_Counts (n)	Confidence_Histogram (4)	(Fraction)	Pixel_Counts	Mean_Uncertainty	Log_Mean_Uncertainty	Log_Mean	Log_Standard_Deviation	JHisto_vs_Opt_Depth (nxn)	JHisto_vs_Eff_Radius (nxn)	JHisto_vs_Eff_Radius_16 (nxn)	JHisto_vs_Eff_Radius_37 (nxn)	JHisto_vs_Temperature (nxn)	JHisto_vs_Emissivity (nxn)	JHisto_vs_Pressure (nxn)	
15. Cloud_Retrieval_Fraction_16_PCL_Liquid																						
16. Cloud_Retrieval_Fraction_16_PCL_Ice																						

(Supplementary 3.7 Retrieval)

01. Cloud_Optical_Thickness_37_Liquid	•	•	•	•			D				•										D	
02. Cloud_Optical_Thickness_37_Ice	•	•	•	•			D				•										D	
03. Cloud_Effective_Radius_37_Liquid	•	•	•	•			•				•					•					D	
04. Cloud_Effective_Radius_37_Ice	•	•	•	•			•				•					•					D	
05. Cloud_Water_Path_37_Liquid	•	•	•	•			•				•											
06. Cloud_Water_Path_37_Ice	•	•	•	•			•				•											
07. Cloud_Retrieval_Fraction_37_Liquid										•	•											
08. Cloud_Retrieval_Fraction_37_Ice										•	•											
09. Cloud_Optical_Thickness_37_PCL_Liquid	•	•	•	•			D				•										D	
10. Cloud_Optical_Thickness_37_PCL_Ice	•	•	•	•			D				•										D	
11. Cloud_Effective_Radius_37_PCL_Liquid	•	•	•	•			•				•					•					D	
12. Cloud_Effective_Radius_37_PCL_Ice	•	•	•	•			•				•					•					D	
13. Cloud_Water_Path_37_PCL_Liquid	•	•	•	•			•				•											
14. Cloud_Water_Path_37_PCL_Ice	•	•	•	•			•				•											
15. Cloud_Retrieval_Fraction_37_PCL_Liquid										•	•											
16. Cloud_Retrieval_Fraction_37_PCL_Ice										•	•											

Derived from L2 Atm Profile (07_L2)

[Note: Low (Sfc-680 hPa) & High (440-10 hPa) def'n changed from C51 to C6]

01. Total_Ozone	•	•	•	•	•	•	•	•														
02. Total_Totals	•	•	•	•	•	•	•	•														
03. Lifted_Index	•	•	•	•	•	•	•	•														
04. Atmospheric_Water_Vapor	•	•	•	•	•	•	•	•														
05. Atmospheric_Water_Vapor_Low [C6 "Low" = Sfc-680mb]	•	•	•	•	•	•	•	•														
06. Atmospheric_Water_Vapor_High [C6 "High" = 440-10mb]	•	•	•	•	•	•	•	•														
07. Retrieved_Temperature_Profile	•	•	•	•							•											

D = SDS in D3 only (not in E3/M3). A total of 19 Joint Histograms were deleted going from D3 to E3/M3 due to 2 GB uncompressed HDF file size limit in HDF4. In the PGE56:v6.1.7 delivery a total of 8 new JH's were added to D3 only. So from that point forward, there are 27 D3 JH's which do not propagate into E3/M3. There are also 3 new Histogram SDS's in D3 related to COP_Phase that also will not propagate to E3/M3 starting in PGE56:v6.1.9.

Note that all “_Joint_Histogram_” SDS names were changed to “_JHisto_” in C006 in TL, D3, E3, & M3. This was done to stay within the 63 character legal SDS name length limit in HDF4. The longest statistic suffix name in L3 is 28 characters. Therefore, the longest parameter prefix name should be held to 35 characters or less to be “safe”; however some parameters can be up to 39 characters if you are careful about what statistics you attempt to compute and what statistic suffix’s you attempt to append.

⁴ *Joint Histogram with Cloud_Effective_Radius_1L_Liquid*

⁵ *Joint Histogram with Cloud_Effective_Radius_1L_Ice*

⁶ *Joint Histogram with Cloud_Effective_Radius_1621_Liquid*

⁷ *Joint Histogram with Cloud_Effective_Radius_1621_Ice*

⁸ *Joint Histogram uses ISCCP-like bin boundaries*

Note the JH’s highlighted in blue in the table in Appendix A are “jointed against” Re 1621 (So those JH’s are: Tau1621 vs. Re1621)

There was not enough room in the SDS name to use “JHisto_vs_Eff_Radius_1621” in the Suffix Name with the long prefix name since there is a hard character limit of SDS names.

In the tables in Appendix A (seen above) the character “D” in the table denotes SDS’s in D3 only (not in E3/M3). A total of 19 JointHistograms were deleted going from D3 to E3/M3 due to 2 GB uncompressed HDF file size limit in HDF4. There are also 14 scaler SDS’s related to COP Fractions that are only in the D3 and not propagated to E3/M3 (due to it not being necessary).

The Single Layer Cloud (1L) and Multi Layer Cloud (ML) aggregation is only defined (currently) for the Primary 2.1 retrieval.

Note that only Liquid and Ice are aggregated for 1621, 16, and 37 (Undetermined Phase and Combined Phase were not included).