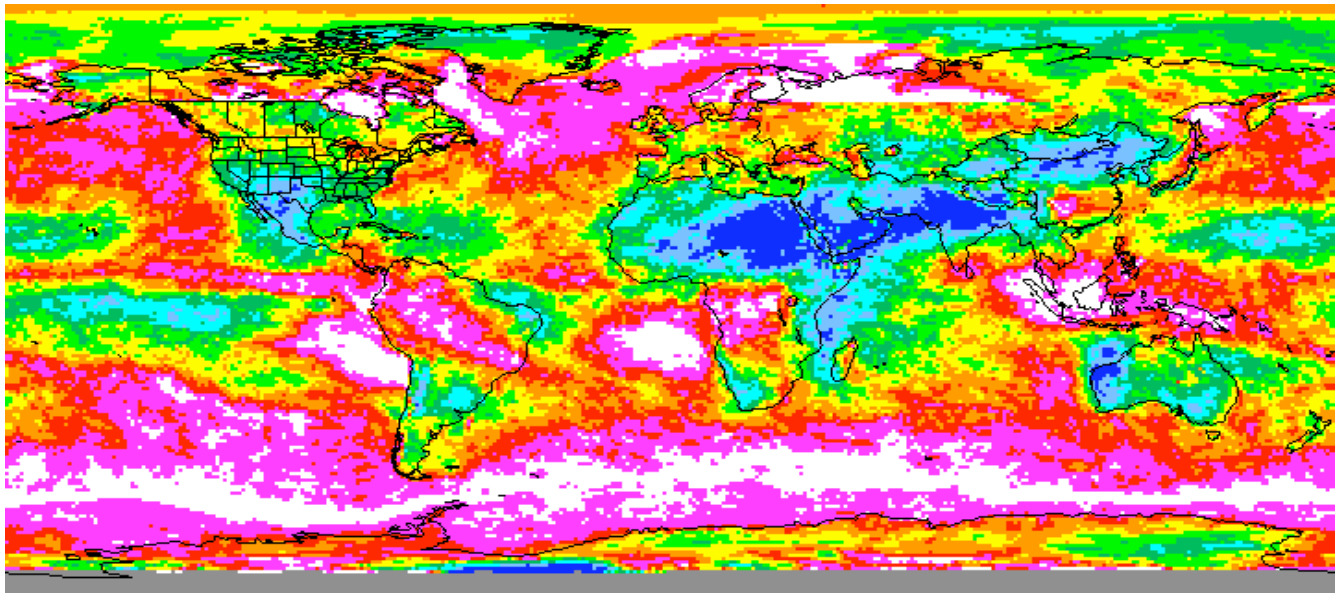
Discontinuity Line Study

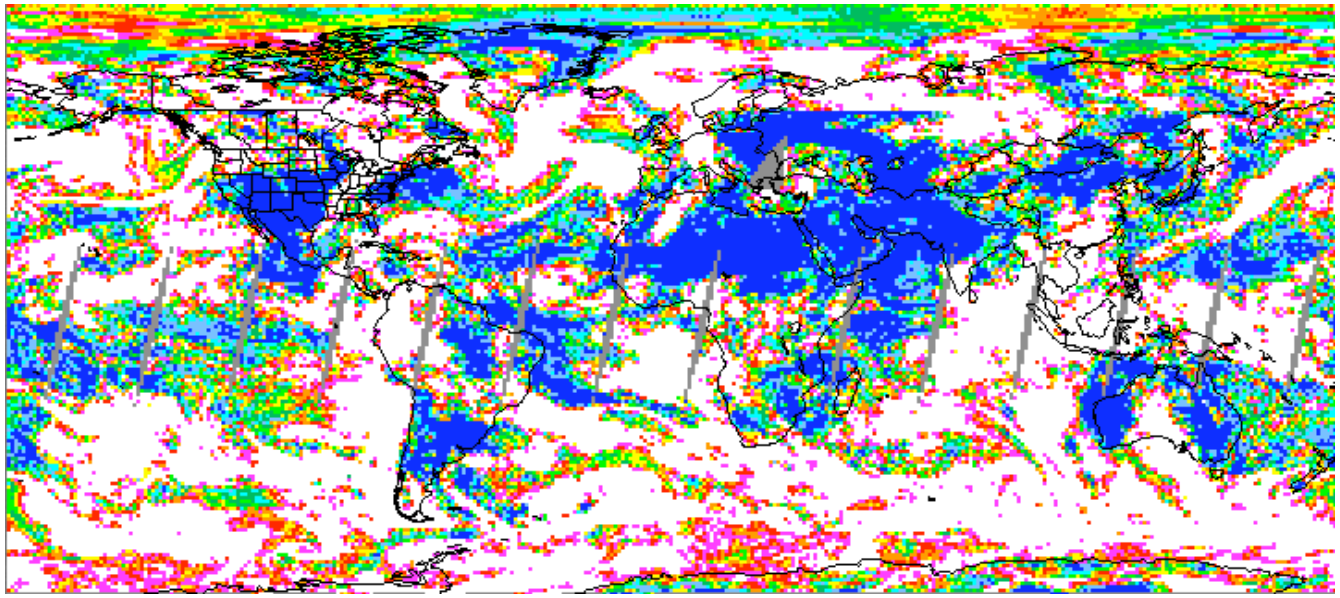
Cloud Working Group

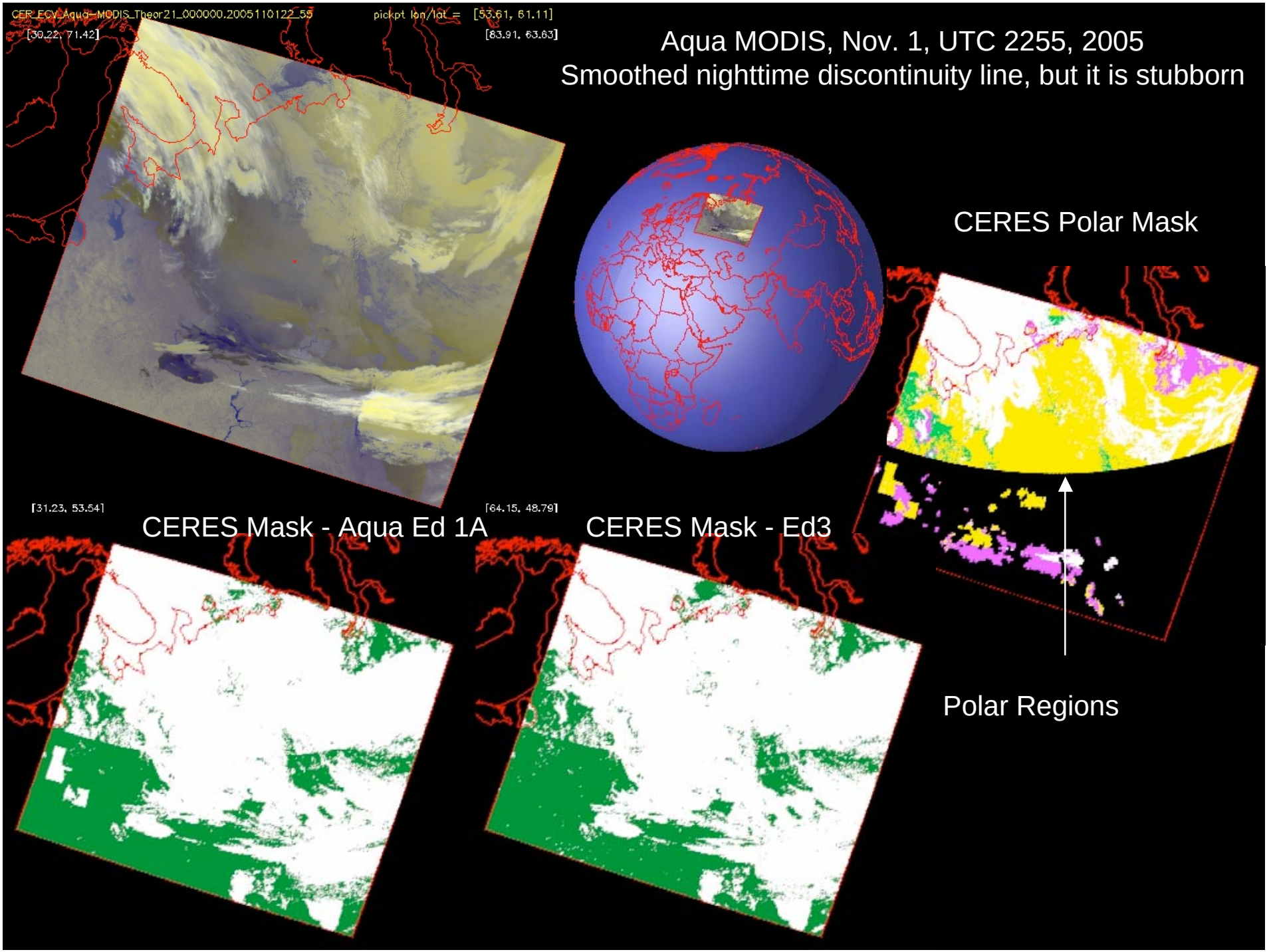
9th CERES-II Science Team Meeting
Newport News,VA, 6 - 8 May, 2008

Monthly Aqua Ed1A Nighttime Cloud Fraction - 200511



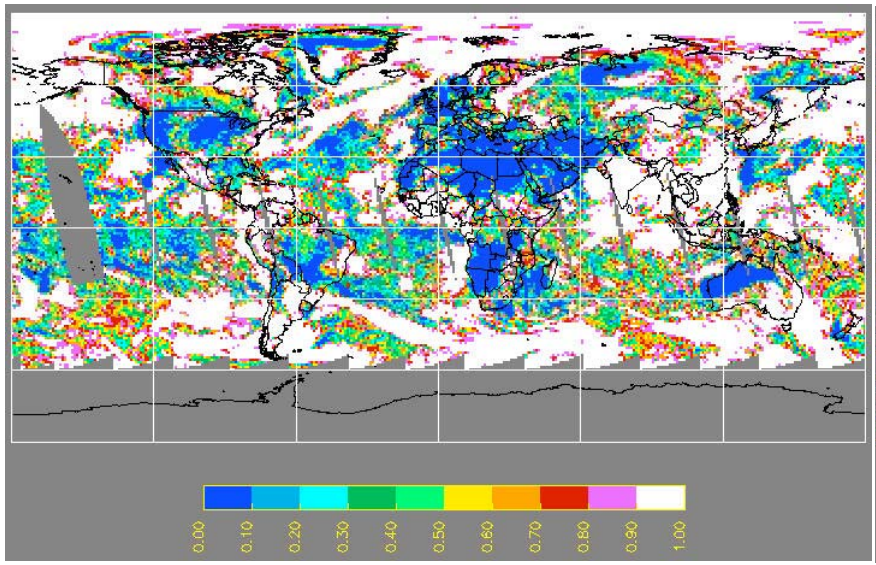
Daily Aqua Ed1A Nighttime Cloud Fraction - 20051101



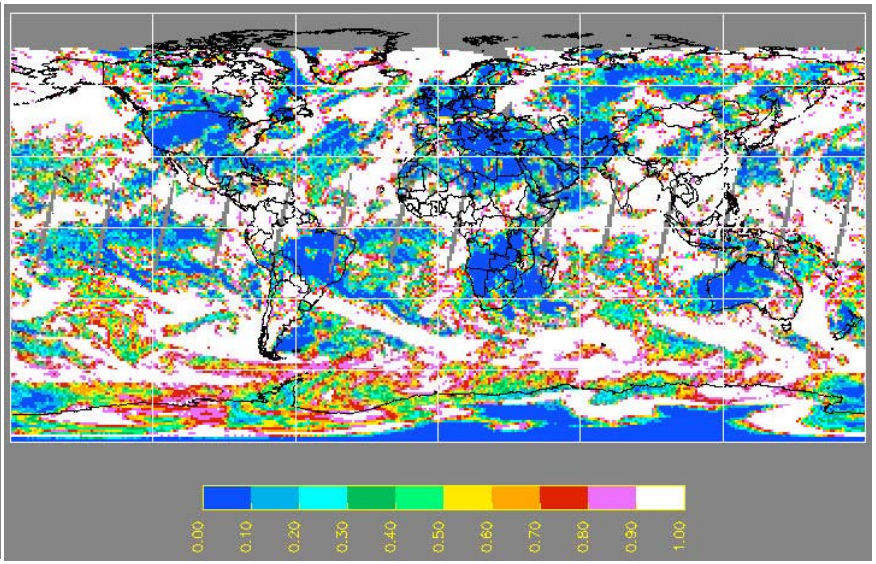

CER_ECV_Aqua-MODIS_Thepr21_000000.2005110122_55
pickpt lon/lat = [53.61, 61.11]
[30.22, 71.42]
[83.91, 63.83]
Aqua MODIS, Nov. 1, UTC 2255, 2005
Smoothed nighttime discontinuity line, but it is stubborn
CERES Polar Mask
[31.23, 53.54]
[64.15, 48.79]
CERES Mask - Aqua Ed 1A
CERES Mask - Ed3
Polar Regions

Discontinuity line from non polar to polar regions

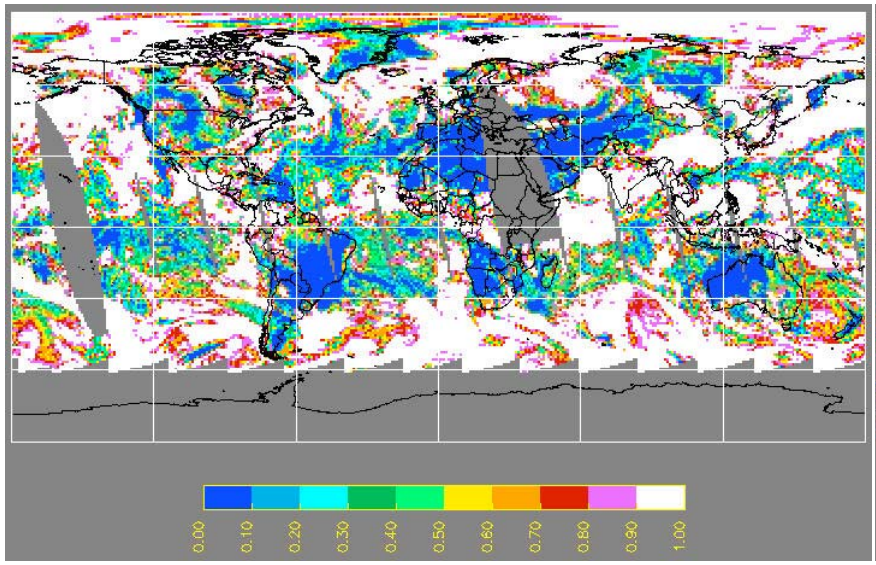
Ed3 Aqua 20060715 Day



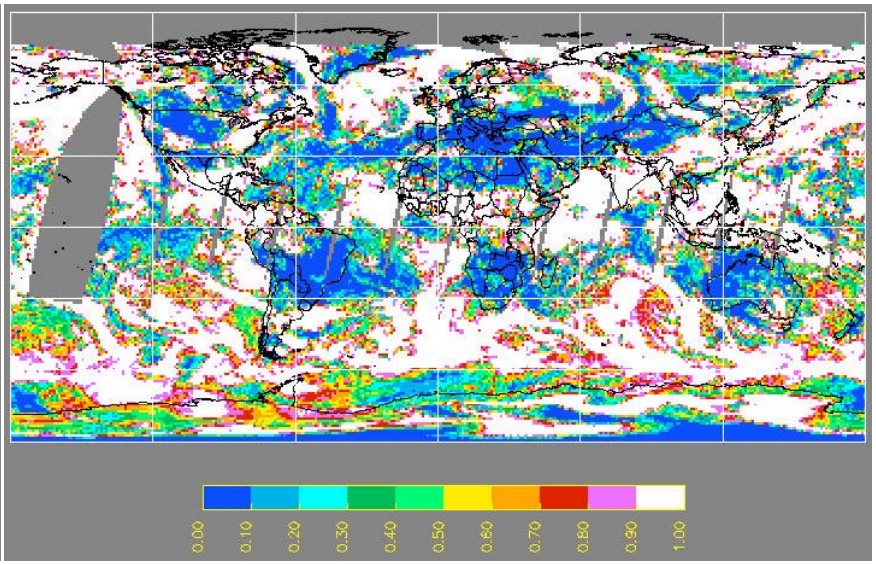
Ed3 Aqua 20060715 Night



Ed3 Aqua 20060722 Day

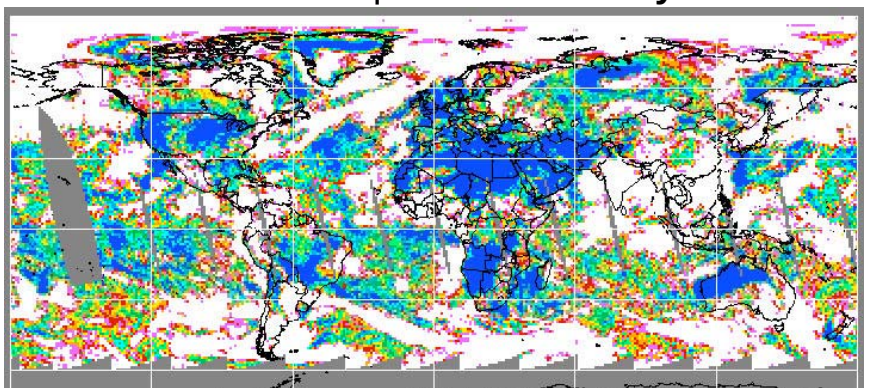


Ed3 Aqua 20060722 Night

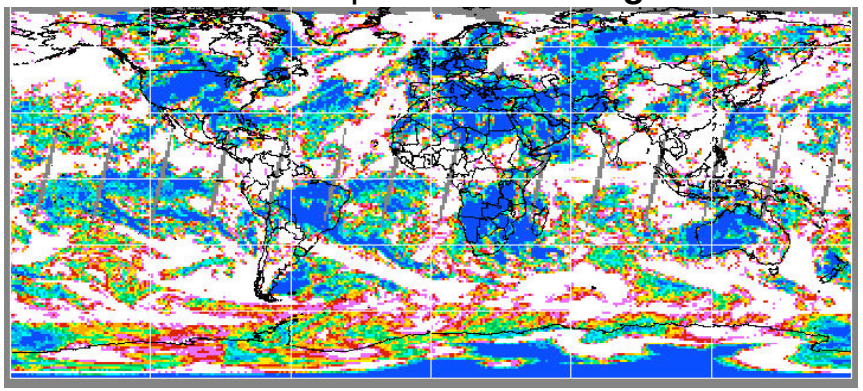


Extend non polar region further into polar region

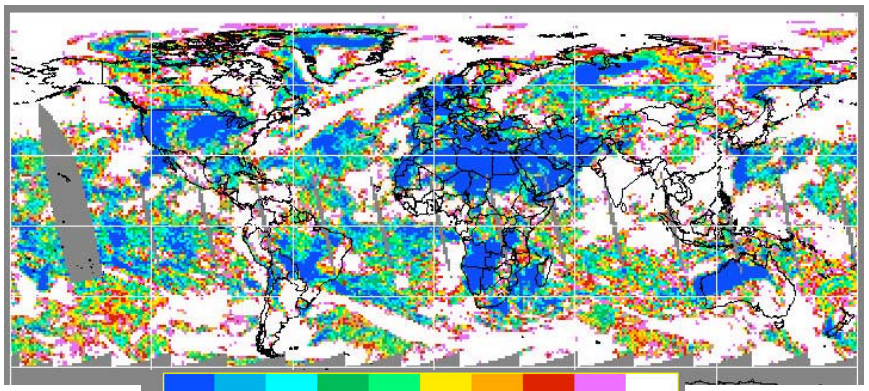
Ed3 Aqua 20060715 **Day**



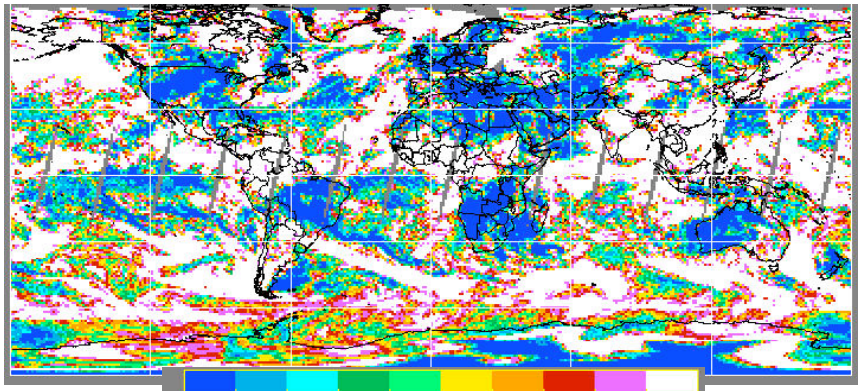
Ed3 Aqua 20060715 **Night**



Ed3 New Polar Definition



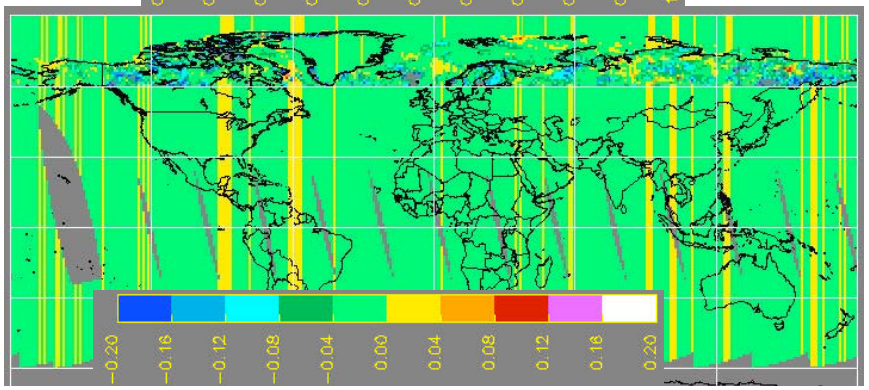
Ed3 New Polar Definition

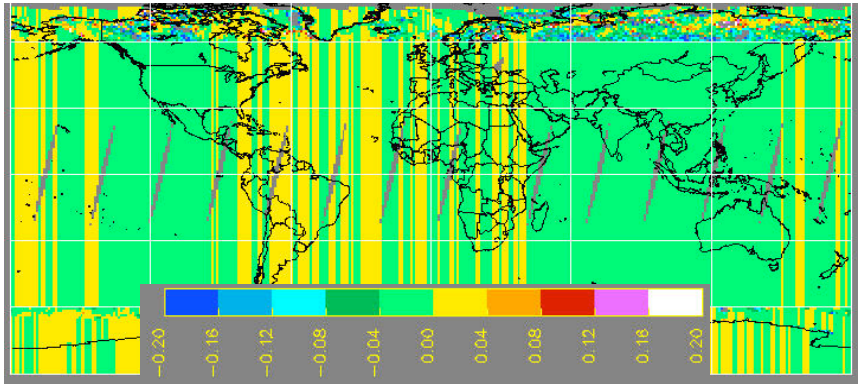


Day

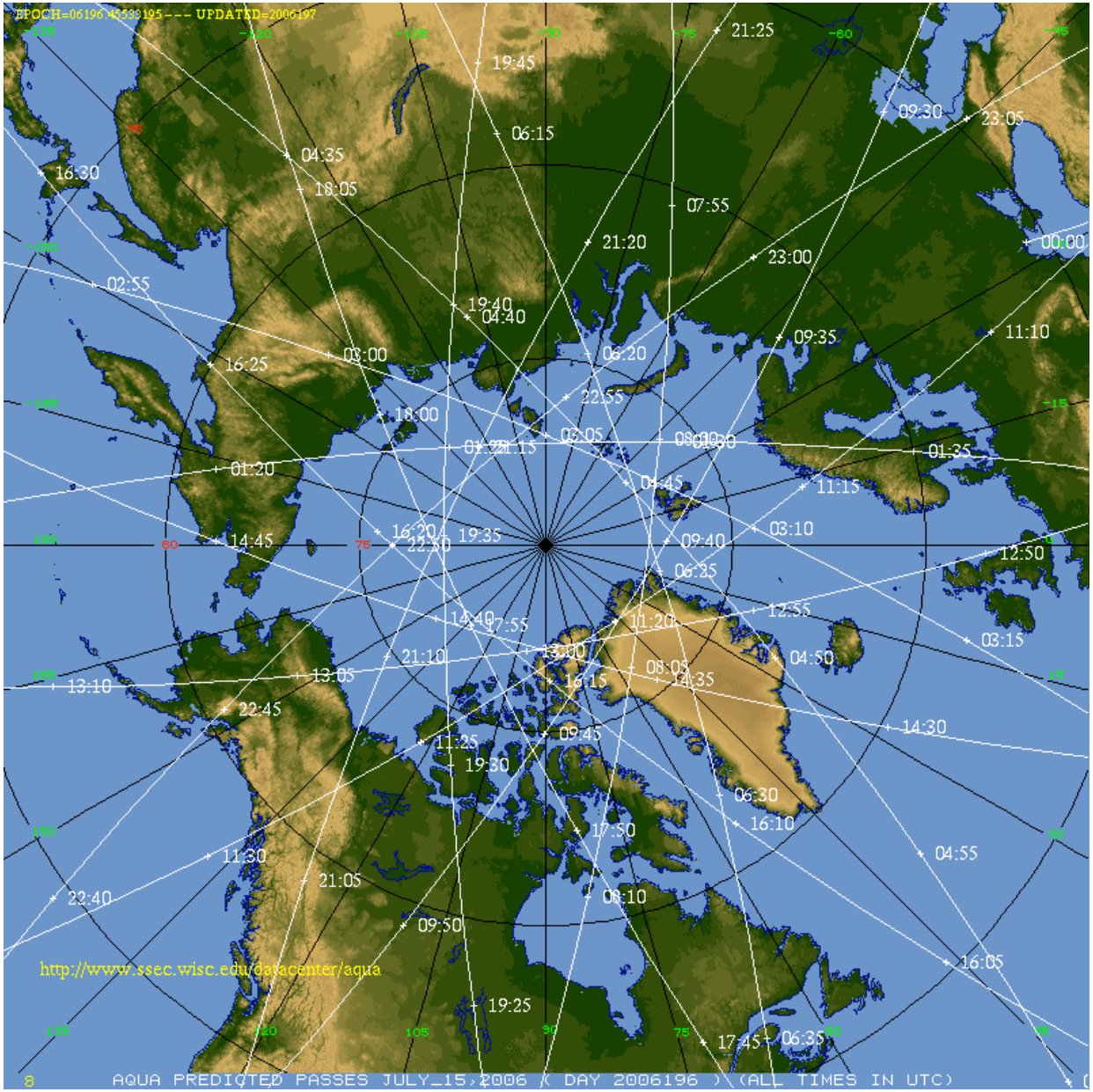
Ed3 NP - OP

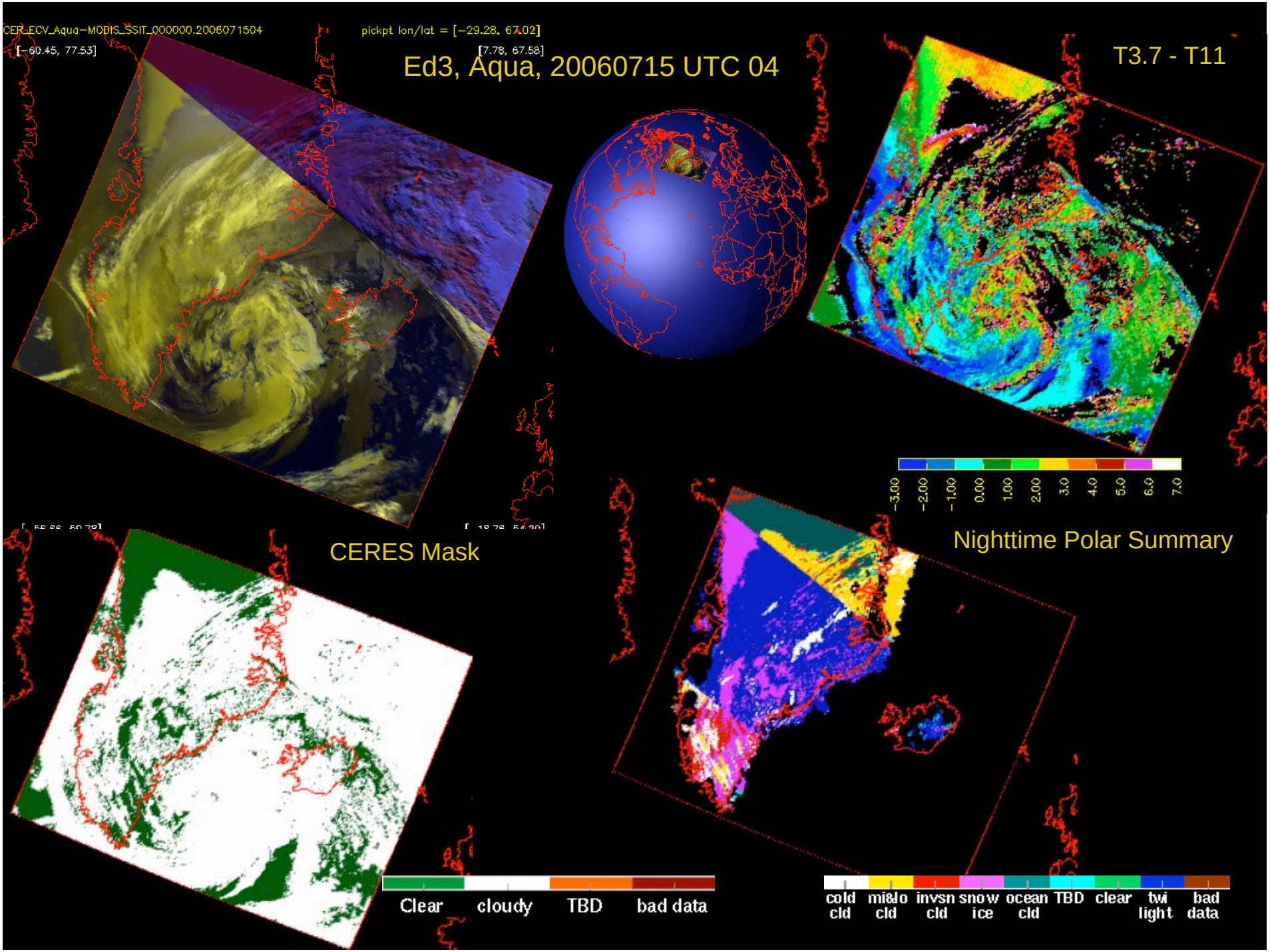
Night

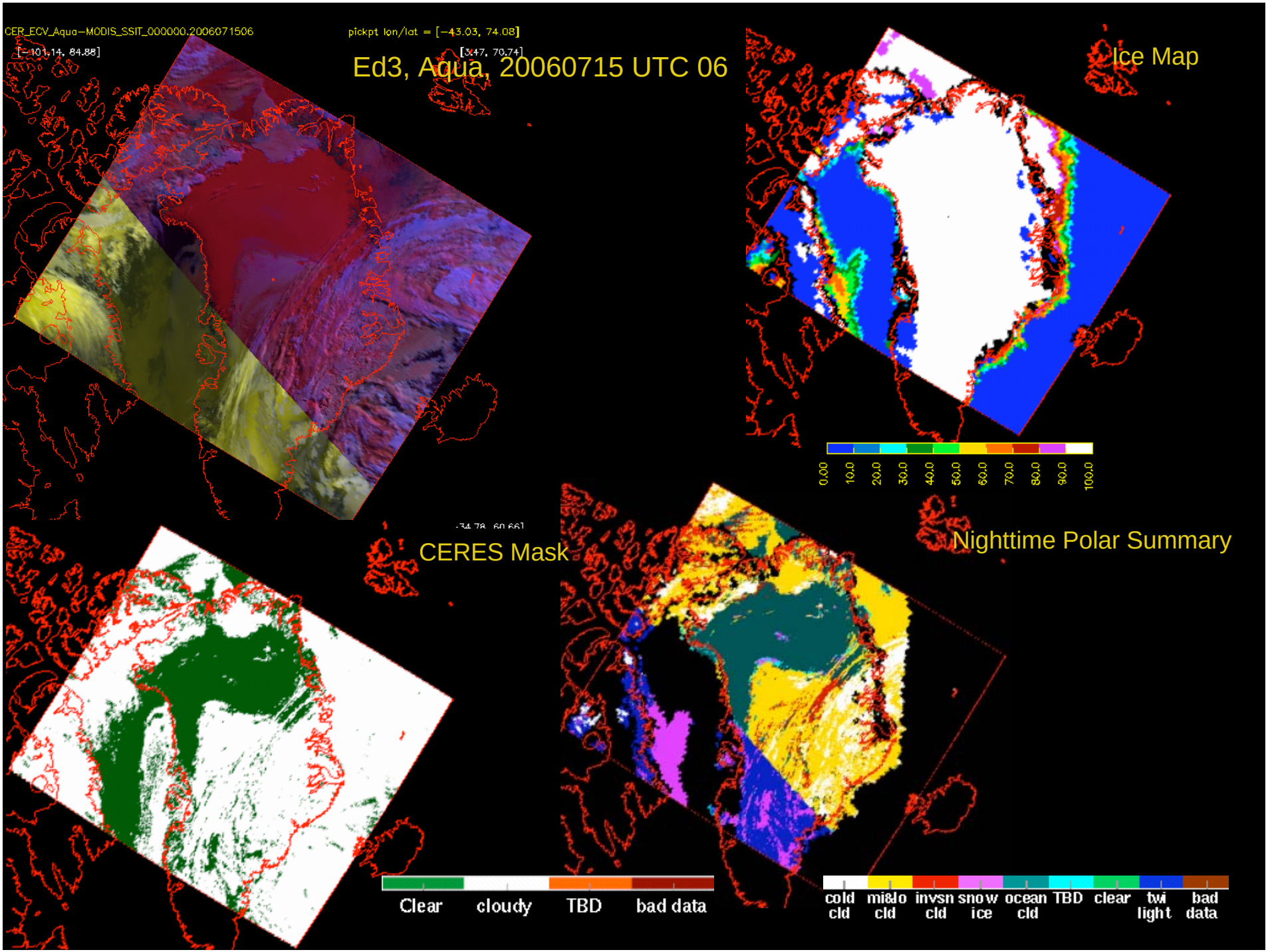


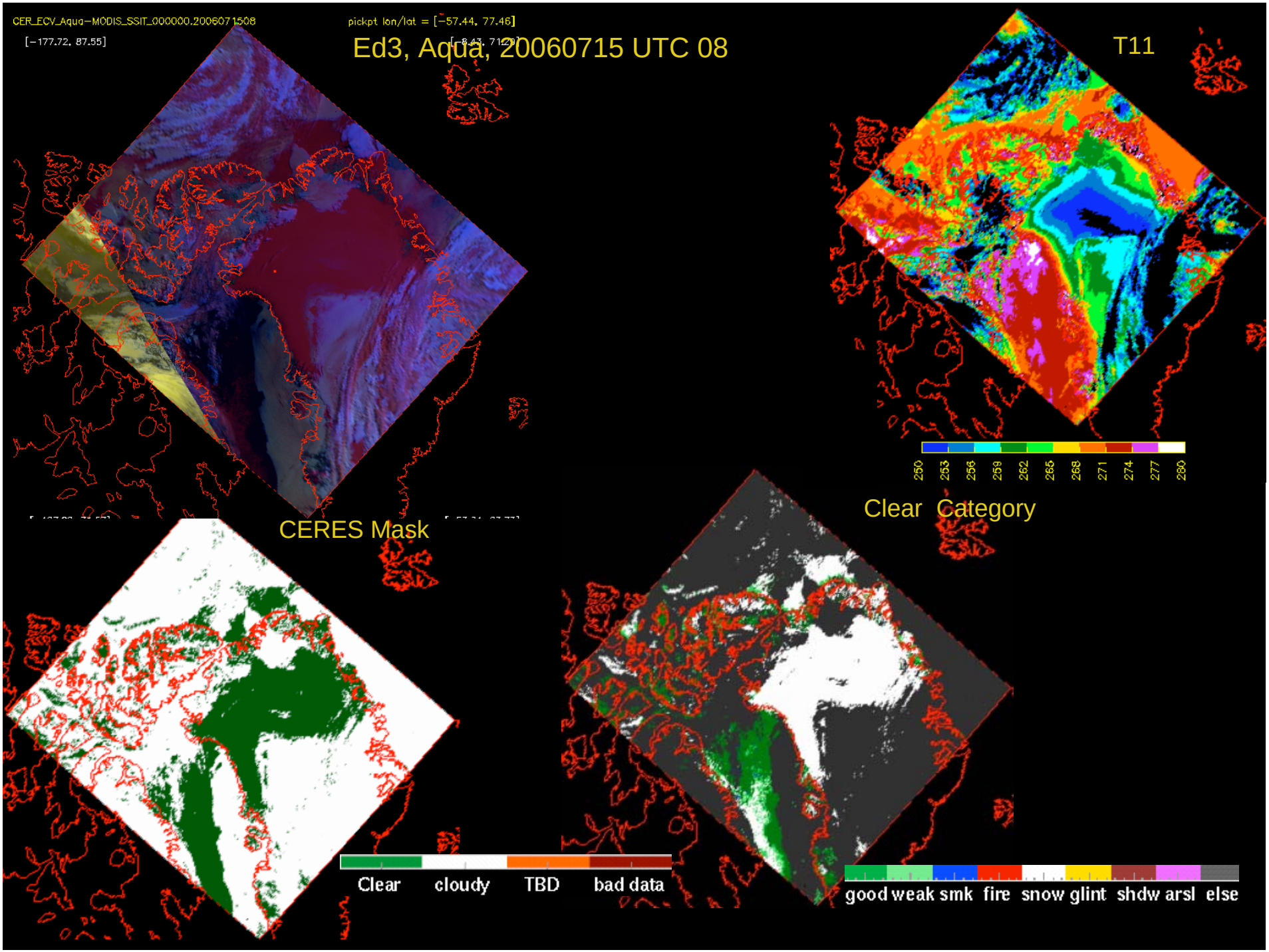


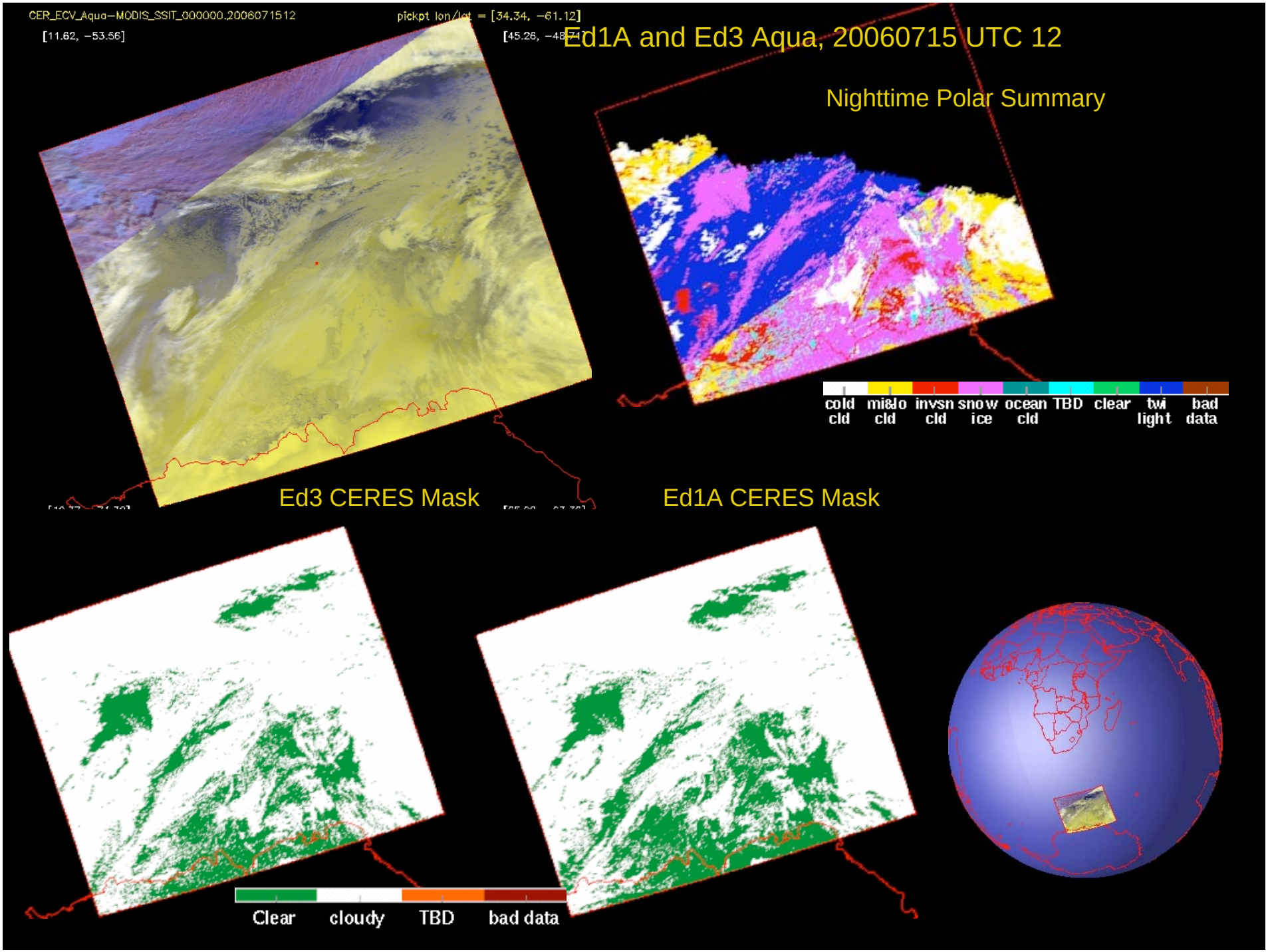
Aqua Track of 20060715

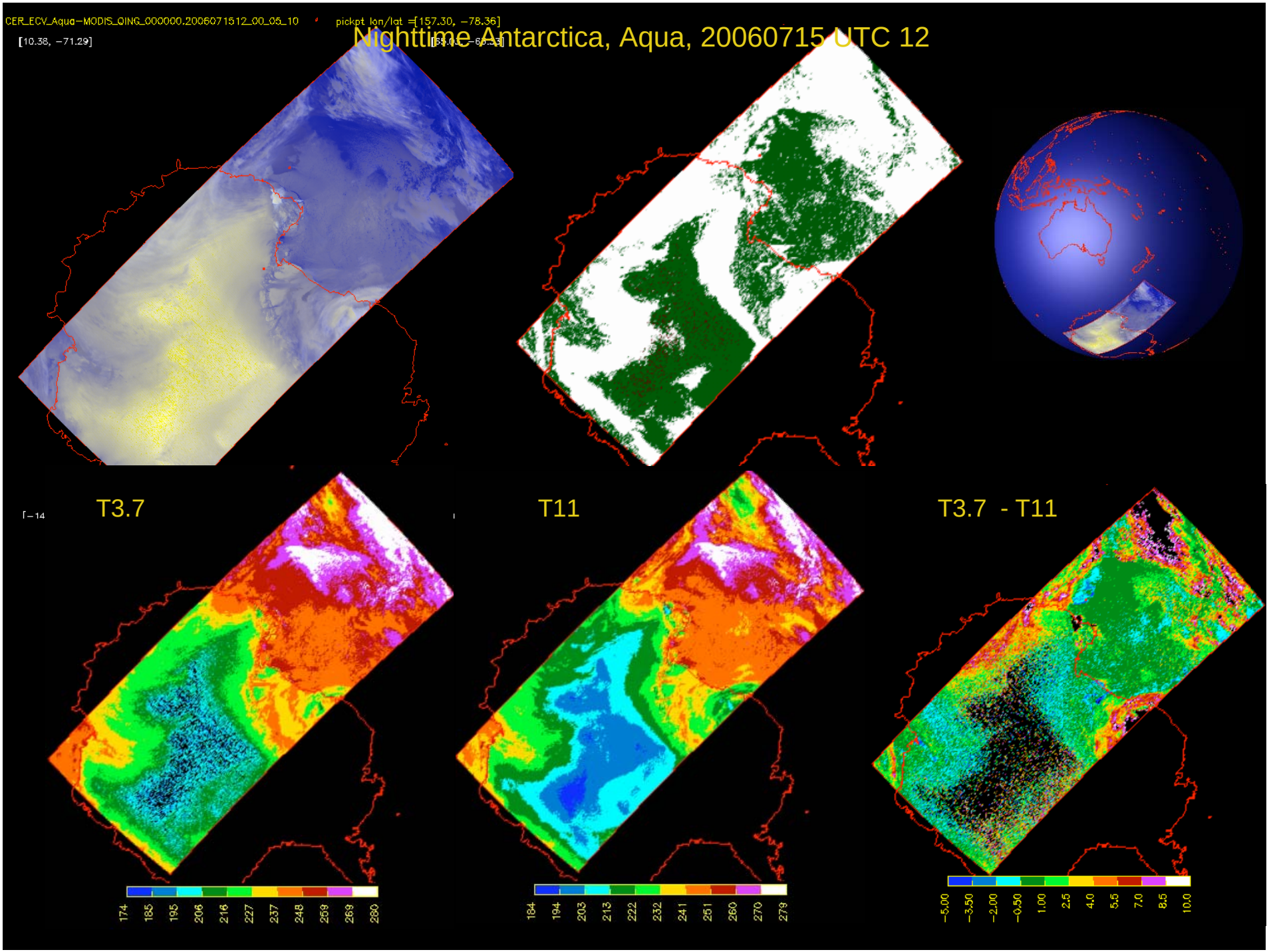



CER_ECV_Aqua-MODIS_SSIT_000000.2006071504
[-60.45, 77.53]
pickpt lon/lat = [-29.28, 67.02]
[7.78, 67.58]
Ed3, Aqua, 20060715 UTC 04
T3.7 - T11
-3.00
-2.00
-1.00
0.00
1.00
2.00
3.0
4.0
5.0
6.0
7.0
CERES Mask
Nighttime Polar Summary
Clear
cloudy
TBD
bad data
cold cld
mi&lo cld
invsn cld
snow ice
ocean cld
TBD
clear
twi light
bad data

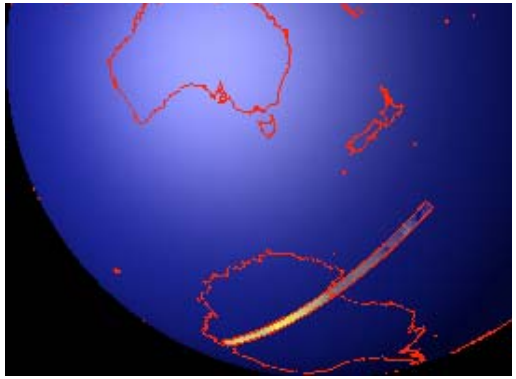

CER_ECV_Aqua-MODIS_SSIT_000000.2006071506
[-101.14, 84.88]
pickpt lon/lat = [-43.03, 74.08]
[347, 70.74]
Ed3, Aqua, 20060715 UTC 06
Ice Map
0.00
10.0
20.0
30.0
40.0
50.0
60.0
70.0
80.0
90.0
100.0
CERES Mask
Nighttime Polar Summary
Clear
cloudy
TBD
bad data
cold cld
mi&lo cld
invsn cld
snow ice
ocean cld
TBD
clear
twi light
bad data

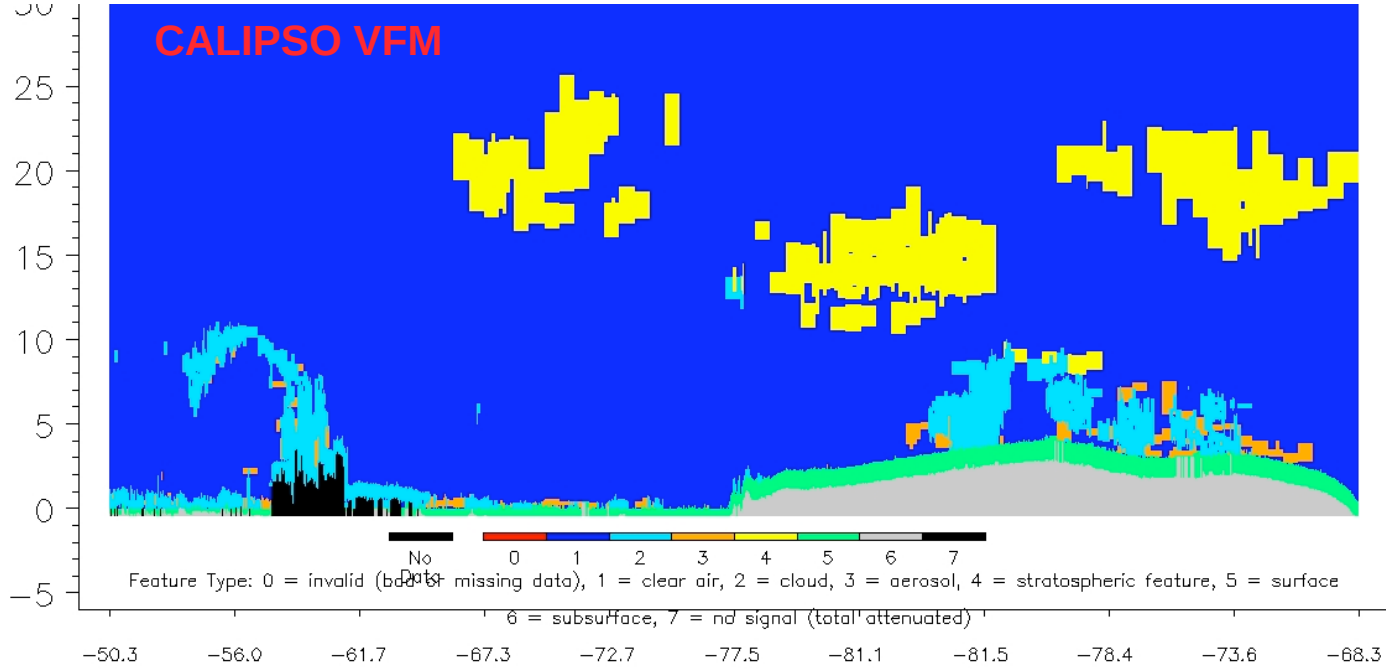

CER_ECV_Aqua-MODIS_SSIT_000000.200607 1508
[-177.72, 87.55]
pickpt lon/lat = [-57.44, 77.46]
Ed3, Aqua, 20060715 UTC 08
T11
250 253 256 259 262 265 268 271 274 277 280
Clear Category
CERES Mask
Clear cloudy TBD bad data
good weak smk fire snow glint shdw arsl else

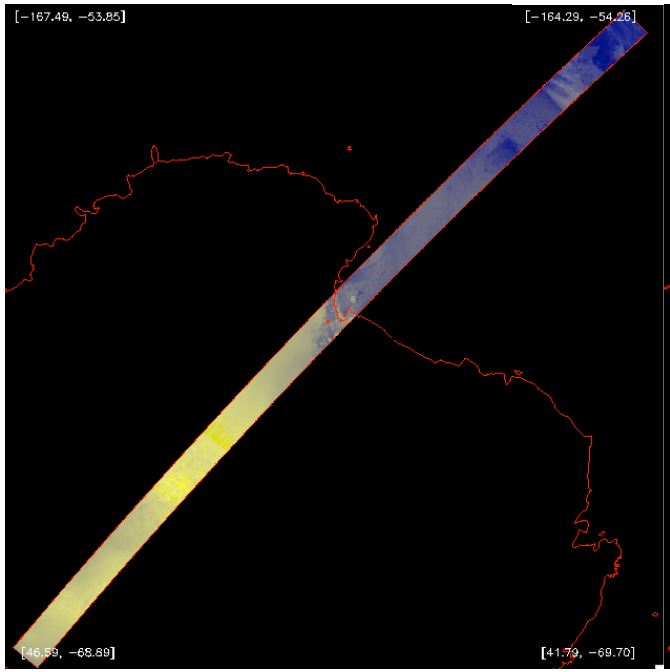

CER_ECV_Aqua-MODIS_SSIT_000000.2006071512
[11.62, -53.56]
pickpt lon/lat = [34.34, -61.12]
Ed1A and Ed3 Aqua, 20060715 UTC 12
Nighttime Polar Summary
cold cld
mi&lo cld
invsn cld
snow ice
ocean cld
TBD
clear
twi light
bad data
Ed3 CERES Mask
Ed1A CERES Mask
Clear
cloudy
TBD
bad data

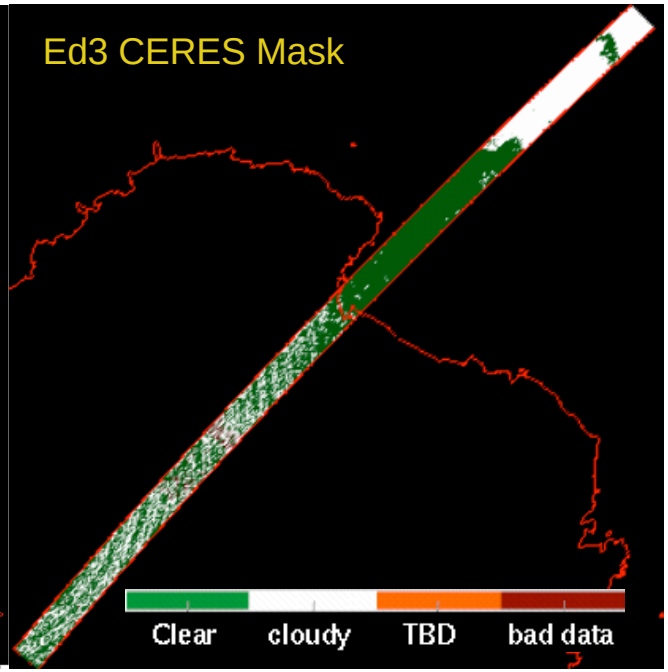

CER_ECV_Aqua-MODIS_QING_000000.20060715l2_00_05_10
pickpt lon/lat =[157.30, -78.36]
[10.38, -71.29]
Nighttime Antarctica, Aqua, 20060715 UTC 12
T3.7
T11
T3.7 - T11
174 185 195 206 216 227 237 248 259 269 280
184 194 203 213 222 232 241 251 260 270 279
-5.00 -3.50 -2.00 -0.50 1.00 2.5 4.0 5.5 7.0 8.5 10.0

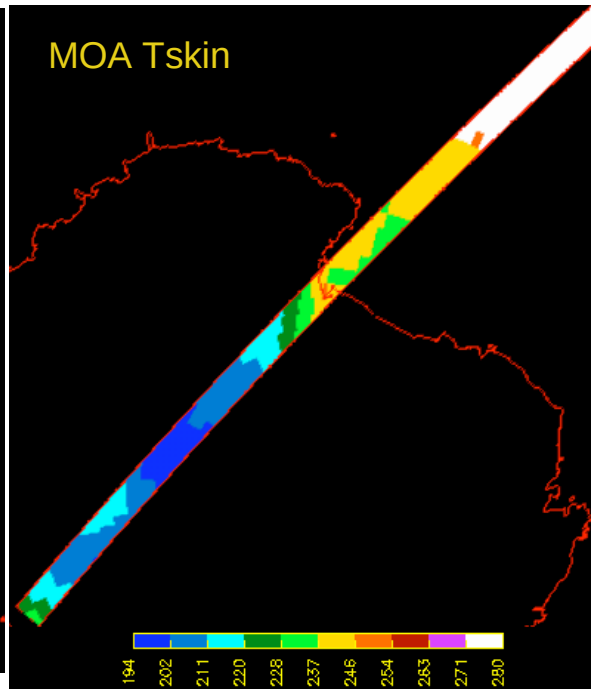
Nighttime Antarctica
Aqua and CALIPSO VFM
20060715 UTC 12











Future Work for Ed3 Beta2

- Validation using CALIPSO
- Daytime cloud fraction discontinuity
- Cloud mask over Super Cold Plateau
- Tune Terra mask to new 3.7 calibration
- …