



# **C6 Land Science Test and Reprocessing Plan**

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# Outline



- **New in C6?**
- **C6 Land Science Test**
  - **C6 L1B, Geolocation, Cloud Mask - Completed**
  - **Product Specific Algorithm changes – Current Status**
  - **What is next?**
- **C6 Reprocessing Plan**
  - **Reprocessing in two Tier**
  - **Reprocessing Time Line**
  - **Product Release**
- **Questions**



# New in C6



- **Improvement in all land products - from improved C6 L1B, Cloud Mask, Geolocation and Land Water Mask**
- **Improvement in LSR, LST, AF, Snow and BRDF/Albedo from product specific algorithm changes**
- **LAI/Fpar and GPP/PSNnet produced at 500m resolution.**
- **VI suite of products generated from 8-day composite reflectance product (MOD09A1/MYD09A1)**
- **BRDF/Albedo produced daily, but product at 1km resolution is not produced.**
- **Expecting C6 LST to replace C5 and C41 and will include two new products – MO[Y]D11B2, MO[Y]D11B3.**
- **Snow will not include Snow Cover Map, and will include two new products**
- **New L2G-lite products – Snow, Ocean bands, thermal bands**



# C6 Land Science Test



## C6 L1B, Geolocation, Cloud Mask and Profile

- **Science tests run to generate complete suite of land products from operational C5 land algorithms using C6 L1B, geolocation, cloud mask and profile as input.**
- **Test results compared to baseline C5 operational data generated using the C5 L1B as input.**
- **Approved C6 L1B, Cloud Mask and Geolocation**
- **C6 L1B Reprocessing completed and forward processing in progress**



# C6 Land Science Test



Current Status: Product specific Algorithm Changes

- **Surface Reflectance (PGE11/PGE75)**
  - Three revisions deliveries tested
  - C6 L2 LSR and CMG generated from C5 L1B Terra and Aqua
  - Reprocessing of C6 LSR from C6 L1B Terra in progress
- **LST (PGE16)**
  - Three revisions delivered
  - Global test and test of selected granules from Terra and Aqua generated
  - Test to generate 1-year of global data in progress
- **Active Fire (PGE30)**
  - Ran global tests for two revisions delivered
- **Snow (PGE07)**
  - New C6 delivery currently in testing



# C6 Land Science Test



## Current Status: Product specific Algorithm Changes

- **Vegetation Index**
  - PGE25 and PGE35 algorithm change delivered and tested
  - Evaluation in progress, further tuning may be required
- **Lai/Fpar**
  - Algorithm change to generate 500m product using L2G-lite delivered
  - Evaluation in progress
- **BRDF/Albedo**
  - Two revisions delivered, expecting one more delivery
  - Recent delivery in testing
- **L2G**
  - Several revisions delivered and tested. No new delivery expected
- **New Products in Testing**
  - MAIAC (Alexie Lyapustin)
  - LST (Simon Hook, JPL)



# C6 Land Science Test



## What is next?

- **Global Land chain Test (SR, VI, BRDF/Albedo)**
  - **1<sup>st</sup> test completed**
  - **2<sup>nd</sup> test in progress (~1 month)**
  - **3<sup>rd</sup> test required (~ 1 month)**
- **Product Specific Tests**
  - **To be scheduled upon delivery of revised version of algorithms**
- **Longer time series tests (over selected area)?**
  - **VI and LAI/FPAR**



# C6 Reprocessing Plan



## Reprocessing in 2 Tiers

- **Two set of products identified**
  - **C5 products for which C6 changes are nearly ready – Algorithms mostly stable and matured. Production rules and issues well understood.**
  - **New products, higher level products - C6 changes not ready, C6 changes and evaluation still evolving, Production effort yet to be estimated**
- **Waiting for all PGEs to be ready for processing could further delay the C6 reprocessing**
  - **1<sup>st</sup> Tier Reprocessing: Will include most of C5 products**
  - **Delayed Tier: Higher level products and new products generated as the PGEs become ready - Burned Area, Land Cover, VCF, new products**



# C6 Readiness

(1<sup>st</sup> Tier, Delayed, Mixed)



Product	Delivery Expected Testing Required	New Products/ Format change	C6 Readiness
Surf Refl	Minor	None	Yes
Surf Temp	Major	MOD11B2, MOD11B3	Yes
Fire	Minor	None	Yes
Snow	Major	MOD10S1, MOD10A1F, MOD10C1F	Yes
SeaIce	None	None	Yes
VI	Minor	None	Yes
BRDF/Albedo	Minor	None	Yes
Lai/FPAR	Minor	None	Yes
GPP/PSNnet	Major	None	Yes
LC, BA, VCF	Major	None	Delayed
MAIAC, ST	Major	New	Delayed



# C6 Testing and Reprocessing TimeLine



**Final Land delivery for  
1<sup>st</sup> Tire reprocessing**

**C5 Land Processing and C4.1 LST**

**Delivery and Testing for  
products in Tier 2**

**Land Science Test**

**C6 Land Reprocessing**

**Begin Tier 1  
Reprocessing**

Apr      May      June      July      Aug      Sept      Oct      Nov      Dec 2013      Jan 2014      Feb 2014



# Outstanding Issues



- **Community Evaluation**
  - **Test results from final version could be released to public**
  - **Not expecting to hold back reprocessing for community evaluation.**
- **Time order of Processing**
  - **Processing from the beginning of mission**
  - **Processing more recent years (2009 – present) first and then process from early mission period**
- **Product Release**
  - **Release after initial review of data review**
  - **New products could be released with Beta maturity status**