



CALIPSO Status

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17 February 2016





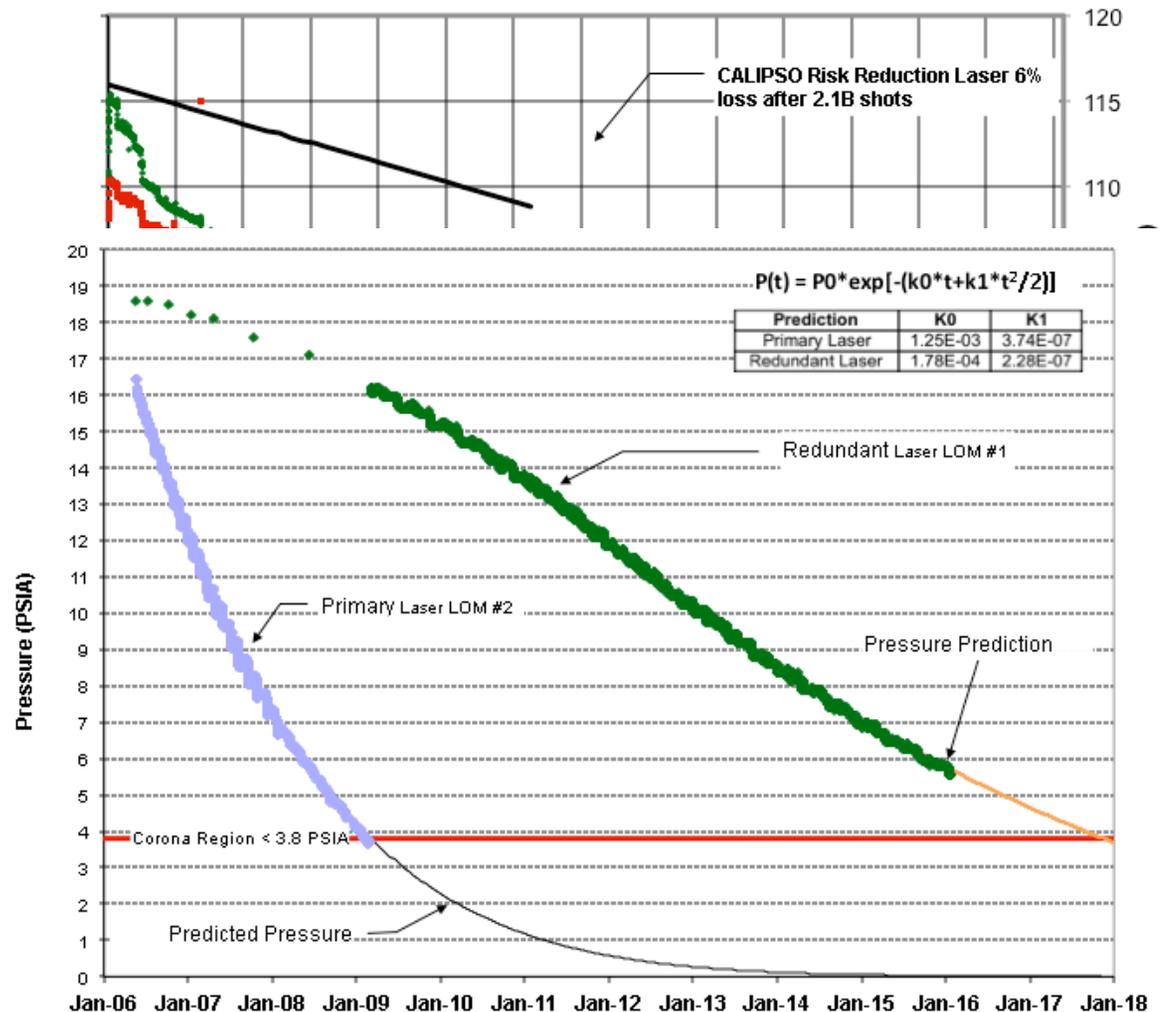
Platform Status

- On January 28, 2016, spacecraft Global Positioning System (GPS) experienced a software error because of insufficient memory for its date counter.
- Spacecraft transitioned into Reduce Command and Control mode – which retains full spacecraft control capability
- However – accurate time and position information is not sent to payload; hence Payload operations were suspended until GPS software can be fixed.
- CNES has a software fix and is preparing to uplink it to the spacecraft (schedule TBD)
- CALIOP – no adverse impacts are expected. Once GPS anomaly is resolved, will proceed cautiously with return to operations.



Payload Status

- Payload systems are healthy
- Laser #1 (current)
 - Performing almost flawlessly stable output energy
 - more than 4.09 billion shots
 - LOM #1 canister pressure predictions indicate the laser entering the corona discharge region in late 2017



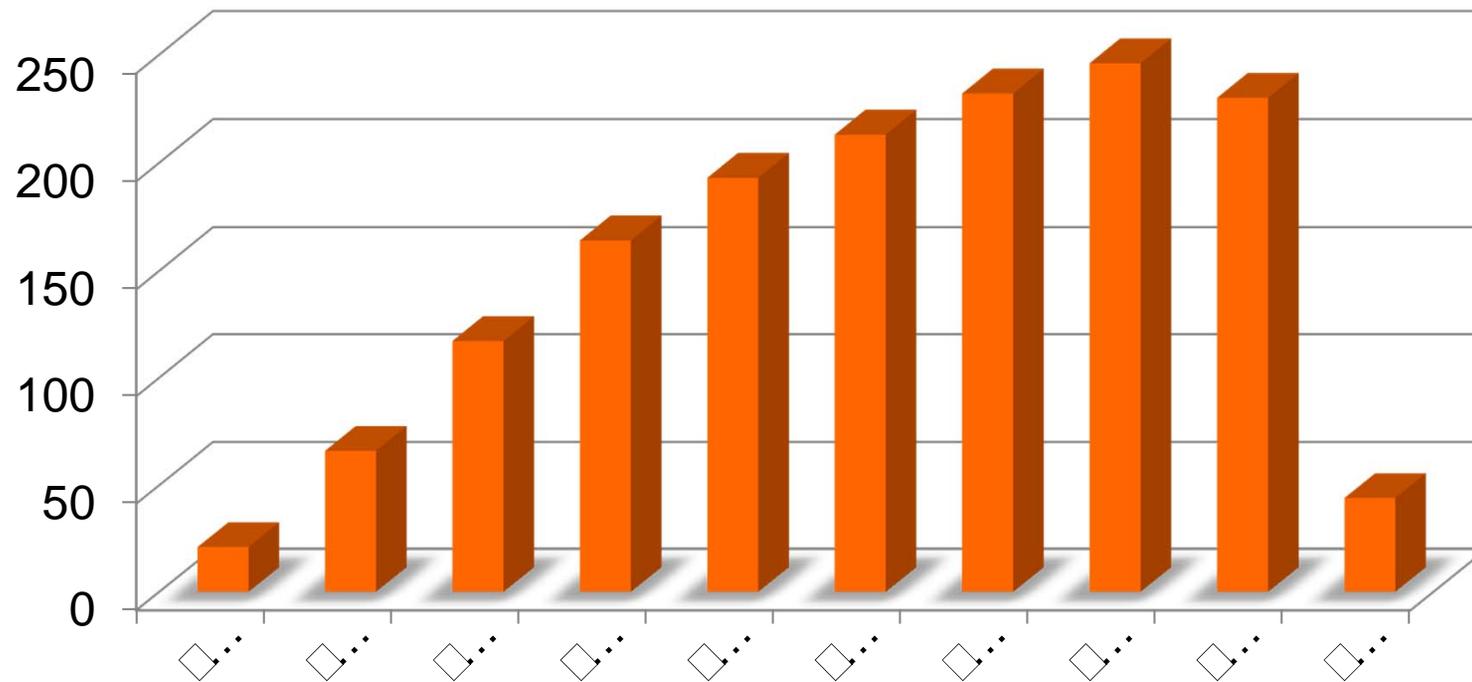


Product Status

- CALIPSO Data Production System Fully Functional
 - Standard and Expedited Level 1, 2, and 3 products processed and archived
- Released CALIOP Aerosol Level 3 (Vers 2.0) in September 2015
- Major Revision nearing completion for CALIOP Level 2 (Vers 4.0)
 - Target release Summer 2016
- Incremental revision for CALIOP Level 1 (Vers 4.1)
 - Target release Summer 2016
- Continuation of IIR Level 1 calibration study
- Collaboration with Cloud Aerosol Transport System (CATS) project to develop CATS-Heritage Level 2 products



Publications



- Over 1500 publications referencing CALIPSO data products
- Over 80 Ph.D dissertations and 55 Master theses based (in whole or in part) using CALIPSO products



Summary

- Spacecraft and payload performing very well
- Completed 9½ years of observations
- Products high cited and appear major scientific assessment reports
- Backup laser expected to become inoperable in 2017
 - Study underway to assess feasibility of restarting primary laser
- Available fuel will allow s/c to maintain inclination until spring 2018
- CALIPSO is collaborating with CATS and EarthCARE teams to aid development of an extended lidar record.



Backup Slides



CALIPSO Extended Mission Scenarios

| Scenario | Time | Orbit | Fuel Resources | Matched Observations | Science Objectives and Impacts |
|----------|-----------------------------|---|--|--|--|
| Baseline | Present – Spring 2018 | 705 km; maintain present position in A-Train (stay in control box) | Conduct A-Train IAM in spring 2017; fuel available for DMU and RMM until at least 2020 | CloudSat (DO-OP), Aqua, OCO-2, Aura, GCOM-W. | <ul style="list-style-type: none">•Extend record to capture seasonal/interannual aerosol/cloud variability (min goal: established 10 year record)•Maintain synergies with A-Train (new joint retrievals with OCO-2)•Overlap with CATS (2014), ADM (2016), and EarthCARE (2018)•Extend stratospheric aerosol record to fill gap until SAGE III launch (2016) |



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| 1 | After Spring 2018 | 705 km; drift to later MLT; maintain control box position | Insufficient fuel available for IAM in spring 2018. Fuel available for DMU and RMM until at least 2020 | 1a) Aqua (MODIS, CERES, AIRS) – assumes no change to CloudSat, OCO-2, Aqua & Aura maneuvers. | <ul style="list-style-type: none"> •Reduced A-Train synergies because of MLT changes (high latitude obs less impacted) •Validate MODIS, AIRS, CERES retrievals at larger viewing angles •Overlap with CATS, ADM, and EarthCARE •Extend stratospheric aerosol record w SAGE III |
| | | | | 1b) CloudSat and/or OCO-2 may choose to drift with CALIPSO | <ul style="list-style-type: none"> •As above in 1a •Added synergy with CloudSat and/or OCO-2 if they drift w CALIPSO |



CALIPSO MLT Drift

Mean Local Time at Ascending Node
with Last CALIPSO Inclination Adjustment in Spring 2017

