



Advanced Mineral Exploration Package

Data focused prospectivity mapping at a global scale

Contact us:
hello@dl-gov.com

85%

reduction in prep time

3x

more AOIs per year

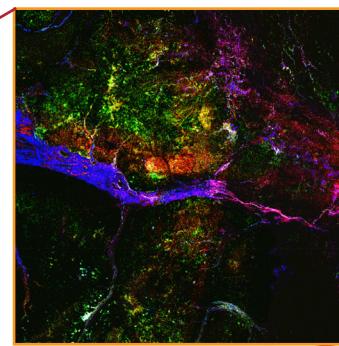
1 week

from idea to prospect

Accelerate exploration timelines with global multispectral data and analytics workflows inside an easy to use, no-code interface

Today's competitive exploration environment requires new technologies and new ways of analyzing and viewing data to make the next generation of discoveries. As exploration expenditures continue to increase but the number of new discoveries does not, teams are actively looking for ways to leverage big data and machine learning to improve targeting success.

The Advanced Mineral Exploration (AME) package provides access to petabytes of analysis-ready data on the Descartes Labs Platform. Our new graphical, no-code interface provides direct access to this data, as well as the remote sensing tools that generative geologists can use to build regional to camp-scale processing workflows to quickly provide insights on the presence and composition of buried ore deposits. By leveraging the scalable data and tools of the Advanced Mineral Exploration Package, they can accelerate hypothesis formulation and exploration strategies to find new deposits in days instead of months.



Unique datasets like the Fused Bare Earth Composite and Geophysical Data Compilations are ready to use in exploration workflows through the Descartes Labs Platform.



Meet Marigold

The highlight of the AME package is Marigold, our new GIS-like user interface. Marigold requires no programming expertise and allows users to interface directly with AME in a familiar, no-code environment. We've improved the user experience by building directly for the needs of the Exploration Geologist.



Marigold enables common remote sensing workflows for exploration:

Lithological mapping and mineral mapping capabilities

Including the ability to generate RGB composites, band ratios, mineral indices, RGB Ternary products, as well as transforms such as decorrelation stretching, and principal components analysis

Advanced spectral mapping

Including spectral similarity analysis, unsupervised methods such as clustering, and spectral unmixing and other supervised classification methods

Lineament analysis

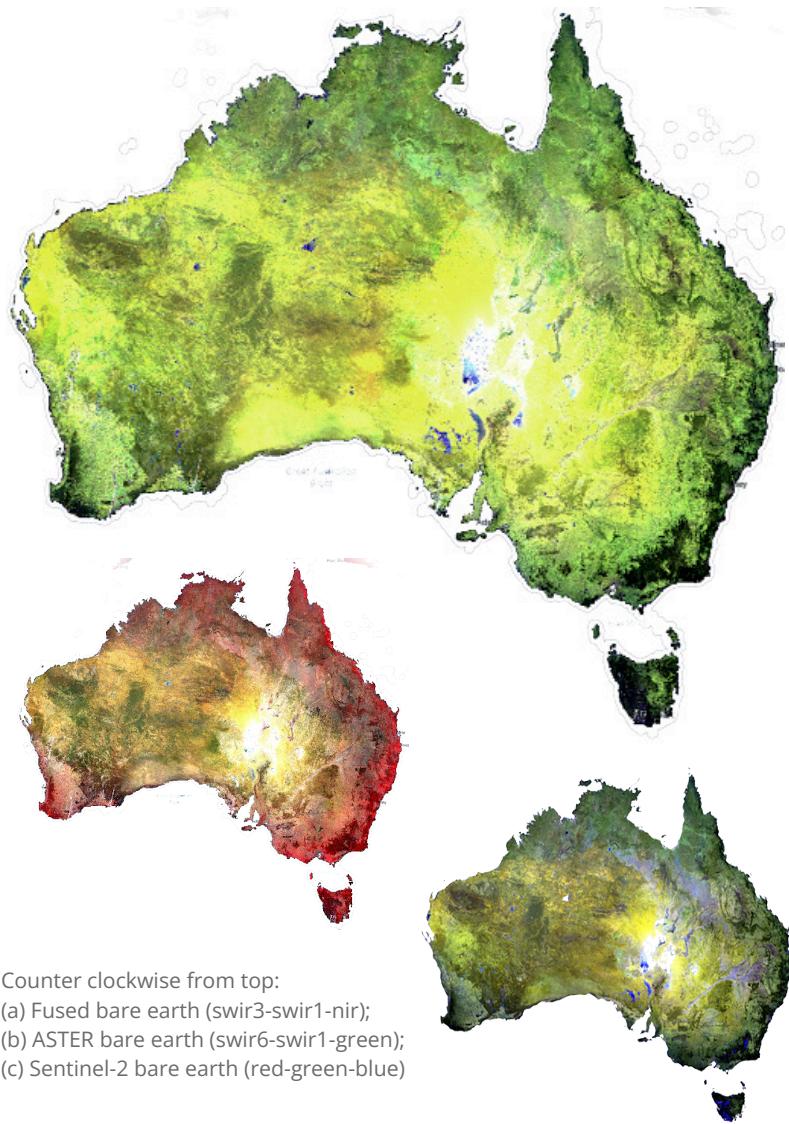
With edge detection for any raster data source



Bare earth composites

The AME package delivers global access to ASTER, Sentinel-2, and Fused bare earth composite imagery that seamlessly represent the earth at its barest point in imaged time, including the following spectral and spatial enhancements:

- Atmospheric correction
- BRDF and parallax-related geometric correction, especially critical for ASTER
- Single scene per pixel compositing
- Enhanced cloud filtering resulting in better spectral integrity
- Scene-to-scene spectral balancing, resulting in spectrally coherent global datasets ready for mapping



Curated & Premium Data Products

- Global ASTER Bare Earth Composite
- Global Sentinel-2 Bare Earth Composite
- Global ASTER/Sentinel-2 Fused Bare Earth Composite
- ASTER
- Sentinel-2
- Airbus SPOT 1.5m pan-sharpened
- AVIRIS Hyperspectral
- Digital Elevation Models (DEMs)



About us

Descartes Labs Government is a geospatial intelligence company that performs scientific analysis of geospatial, remote sensing, and diverse complementary data sets.

Our SaaS platform automates the analysis of geospatial imagery for our users, enabling planetary scale analysis through artificial intelligence and machine learning. The company also supports a diverse set of federal government efforts to curate, analyze, and provide unique actionable insights from geospatial data.

What our customers say

"This product offers practical applications for regional to camp-scale target generation and predictive mineral mapping as a prospecting tool for our exploration areas and beyond."

— Exploration Geologist at a large mining client

Processing toolbox

Building on top of the core datasets, the AME package also contains unique spectral and spatial processing techniques:



Band algebra to produce data layers that highlight specific mineral alterations

- Ability to generate custom band combinations
- Ability to generate custom band ratios
- Industry-recognized and custom mineral indices
- Custom band and raster processing



Classification algorithms to group data into clusters

- Unsupervised methods, including k-means
- Supervised methods, including SAM and Matched Filter
- Spectral unmixing using built in (USGS) and in-scene spectral libraries
- Interpretation of location-specific spectral composition to aid in interpretation of compositional characteristics
- Spectral Similarity method to map pixels with similar spectral signatures of known targets

Image transforms to enhance and improve analytical results

- Image contrast stretching
- Principal components analysis
- Decorrelation stretch



Edge detection algorithms

- Canny-detection methods to map faults, lineaments, and flowlines from optical data
- Method can also be used to aid in interpretation of geophysical datasets

Documentation & APIs

The AME comes with educational resources that cover spectral geology principles, along with remote sensing reference materials and video guides. Customers can also take advantage of premium support with our technical staff and remote sensing geologists.

For teams with Python experience, we offer access to our Workbench coding environment, with a suite of Jupyter notebooks that illustrate the use of the APIs to demonstrate the geological remote sensing methods for exploring a variety of different alteration targets.