



Mars Target Encyclopedia

Knowledge Automatically Obtained from
Scientific Publications

What is the problem?

Knowledge obtained from Mars surface exploration is scattered in thousands of scientific publications – more than anyone can read.

What is the solution?

Information extraction tools customized for planetary science can ingest PDF publications, extract knowledge, and store it in a searchable database.

Who are our customers?

- Mars Science Laboratory scientists
- Future mission designers
- General public wanting to know “What have we learned about Mars?”

What capabilities are on offer?

- Trainable machine learning models for identifying entities and relations of interest in text
- Database links extracted facts (e.g., “Engo contains hematite”) with excerpt from source publication and link to full text

What is included?

- Information extraction pipeline (from PDF to database)
- Web server to provide search capabilities and rover traverse map visualization
- Database containing information extracted from ~6000 publications
- Installation and configuration instructions

Mars Target Encyclopedia
Compositional information from publications about MSL ChemCam surface targets
Publications currently indexed: abstracts from LPSC 2015 and 2016

hematite

9 targets found

Confidence_Hills 46 properties 8 publications	Maturango 8 properties 2 publications	Windjana 103 properties 10 publications
Engo 1 property 1 publication	Stovepipe_Wells 3 properties 1 publication	Buckskin 11 properties 3 publications
Big_Sky 9 properties 2 publications	Tsumeb 1 property 1 publication	Augusta 1 property 1 publication

MMSIS
Map
0m 500m 1000m
Longitude, Latitude
137.35613823°, -4.67087364°
MTE

AMMOS – Advanced Multimission Operations System, a NASA-sponsored set of products and services for mission operations systems

For more information and access to the AMMOS catalog – <http://ammos.jpl.nasa.gov>

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