

# Virtual Moon atlas Pro 6.0 freeware

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## Abstract

Since 2002, we develop “Virtual Moon Atlas” a freeware to help Moon observing and to improve interest for Moon in general public.

## 1. Introduction

VMA Pro” version uses datas coming from NASA, USGS, JPL, from Dr Robinson, Binder, Gaddis, Zuber and Salamuniccar teams, and from Kaguya, and Chang’é missions

The software includes management of a complete database (Near 60 000 entries) of named or satellite or anonymous features of Moon two sides.

Pictures libraries presenting each formations and coming from LPI resources and amateurs shootings are associated and contain more than 8 000 pictures. PHOTLUN © is a specific included pictures manager. VMA Pro 6.0 is presently available for Windows, Linux and Mac OS.

VMA software has been reviewed in main amateur astronomy magazines [1],[2],[3],[4]...

Translations are available (FR/EN/GE/SP/IT/CN...) .

VMA software has been downloaded near 900 000 times. It is or has been used by several professional organizations such as Kitt Peak, National Japan Observatory, University College London (K. Joy), , several French astronomy magazines and astronomy writers (P. Harrington, T. Plotner ...) . Recommended by ESA, registered as educational software by French ministry for education.



Picture 1 : Plato area with LRO texturel

## 2. Detailed description

### 2.1 Freeware features :

- « Map » window with various functions thumbnails « Information », « Ephemeris », « Notes», Tools »
- Full rotating Moon globe with coordinates grid
- Double window ability permitting comparisons between different textures and overlays combinations
- Real time or choosen phase and librations display
- Orientation of the lunar disk with powerful zoom
- Formations search function starting from name
- Formations names display according to zoom power
- Orbital viewing simulation
- Integrated notepad for your own notes
- Size and distance measurement tool on maps
- Context menu on right mouse click
- Maps and databases printing with captions setup
- Eyepieces and CCD cameras field simulation
- Full screen display for public videoprojections

**2.2 Databases :** Included databases contains more than 60 000 formations:

- Nearside & Farside named and satellite formations
- First anonymous craters database
- Human exploration sites (Historical)
- Lisa Gaddis pyroclastic deposits
- ALPO domes databases

For each formation, included informations about : Formation geology, localization on lunar disk, detailed description, detailed name origin, official IAU 2012 datas

All these databases include the “LUN / Lunar Universal Number” conceived by ourselves and permitting “naming” and localization of any lunar formation more than 0.1 arc minute wide.

DATLUN © is a specific database manager using

Form Name	TYPE	PERIOD	NAME DETAIL	NUMBERING	UNIVERSAL	RELEVANT	PHOTOS	MAPS	OTHER
DEA BRADY ALPINE	Crater	Unknown (From 1.000 to 1.000)	Not named	Not named	Not named	Not named	Not named	Not named	Not named
DEA BRADY BETA	Crater	Unknown (From 1.000 to 1.000)	Not named	Not named	Not named	Not named	Not named	Not named	Not named
DEA BRADY GAMMA	Crater	Unknown (From 1.000 to 1.000)	Not named	Not named	Not named	Not named	Not named	Not named	Not named
DEA BRADY DELTA	Crater	Unknown (From 1.000 to 1.000)	Not named	Not named	Not named	Not named	Not named	Not named	Not named
DEA BRADY Epsilon	Crater	Unknown (From 1.000 to 1.000)	Not named	Not named	Not named	Not named	Not named	Not named	Not named
DEA BRADY ZETA	Crater	Unknown (From 1.000 to 1.000)	Not named	Not named	Not named	Not named	Not named	Not named	Not named
DEA BRADY Eta	Crater	Unknown (From 1.000 to 1.000)	Not named	Not named	Not named	Not named	Not named	Not named	Not named
DEA BRADY Theta	Crater	Unknown (From 1.000 to 1.000)	Not named	Not named	Not named	Not named	Not named	Not named	Not named
DEA BRADY Iota	Crater	Unknown (From 1.000 to 1.000)	Not named	Not named	Not named	Not named	Not named	Not named	Not named
DEA BRADY Kappa	Crater	Unknown (From 1.000 to 1.000)	Not named	Not named	Not named	Not named	Not named	Not named	Not named
DEA BRADY Lambda	Crater	Unknown (From 1.000 to 1.000)	Not named	Not named	Not named	Not named	Not named	Not named	Not named
DEA BRADY Mu	Crater	Unknown (From 1.000 to 1.000)	Not named	Not named	Not named	Not named	Not named	Not named	Not named
DEA BRADY Nu	Crater	Unknown (From 1.000 to 1.000)	Not named	Not named	Not named	Not named	Not named	Not named	Not named
DEA BRADY Xi	Crater	Unknown (From 1.000 to 1.000)	Not named	Not named	Not named	Not named	Not named	Not named	Not named
DEA BRADY Omicron	Crater	Unknown (From 1.000 to 1.000)	Not named	Not named	Not named	Not named	Not named	Not named	Not named
DEA BRADY Pi	Crater	Unknown (From 1.000 to 1.000)	Not named	Not named	Not named	Not named	Not named	Not named	Not named
DEA BRADY Rho	Crater	Unknown (From 1.000 to 1.000)	Not named	Not named	Not named	Not named	Not named	Not named	Not named
DEA BRADY Sigma	Crater	Unknown (From 1.000 to 1.000)	Not named	Not named	Not named	Not named	Not named	Not named	Not named
DEA BRADY Tau	Crater	Unknown (From 1.000 to 1.000)	Not named	Not named	Not named	Not named	Not named	Not named	Not named
DEA BRADY Upsilon	Crater	Unknown (From 1.000 to 1.000)	Not named	Not named	Not named	Not named	Not named	Not named	Not named
DEA BRADY Phi	Crater	Unknown (From 1.000 to 1.000)	Not named	Not named	Not named	Not named	Not named	Not named	Not named
DEA BRADY Chi	Crater	Unknown (From 1.000 to 1.000)	Not named	Not named	Not named	Not named	Not named	Not named	Not named
DEA BRADY Psi	Crater	Unknown (From 1.000 to 1.000)	Not named	Not named	Not named	Not named	Not named	Not named	Not named
DEA BRADY Omega	Crater	Unknown (From 1.000 to 1.000)	Not named	Not named	Not named	Not named	Not named	Not named	Not named

menus or SQL requests on every data.

Picture 2 : DATLUN main screen

**2.3 Mapping textures:** JPL shaded relief with albedo (1500 m/pix) and without albedo (1000 m / pix), Dr Robinson teams Clementine (200 m / pix) and LRO (120 m/pix), USGS Lunar Orbiter and CNSA Chang'è 2 (60 m per pixel) HR textures.

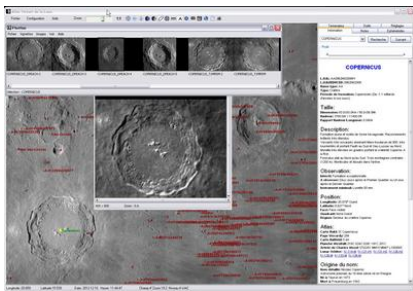
**2.4 Historical textures:** Permitting easy comparisons of these pioneers works with present datas: (Langrenus 1645 / Hevelius 1647 / Cassini 1679 / Tobias Mayer 1791)

**2.5 Scientific overlays:** 44 different ones : Gravity, temperature, altimetric, geologic, various elements as thorium, iron, several neutrons varieties... overlays can be applied on each texture.

**2.6 Pictures libraries:** VMA includes lunar pictures libraries (More than 9 000 pictures) from :

- Lunar Orbiter Photographic Atlas of Moon
- Lunar probes
- Apollo missions mapping and 70 mm
- Consolidated Lunar Atlas
- Lunar Astronautical Charts and Lunar Maps
- Best amateur lunar imagers pictures

PHOTLUN © specific pictures manager with editing possibilities permitting basic processing included.

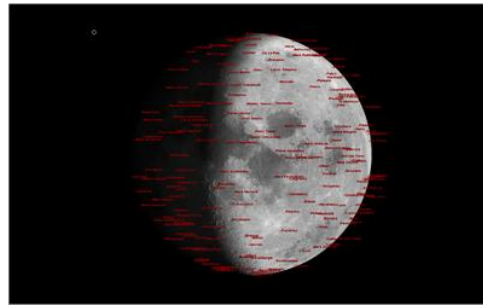


Picture 3 : PHOTLUN main screen

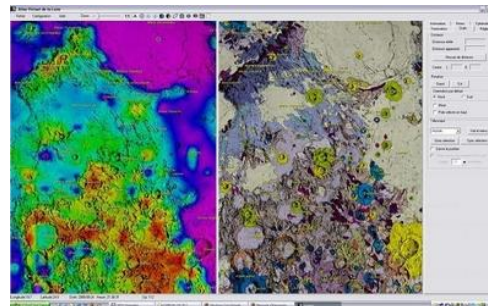
**2.7 Internet connection :** The WEBLUN © module using a special lunar Internet sites database permits connection and interactivity while using VMA.

**2.8 Delivery:** VMA Pro 6 version and all add-ons collection are freeware and downloadable free from our Web site <http://www.ap-i.net/avl/en/start>  
We maintain a discussion forum and we encourage other languages translations. We also listen continuously to our users requests, (including professionals), trying to update the software with new useful functionalities.

**OTHERS SCREEN CAPTURES :**



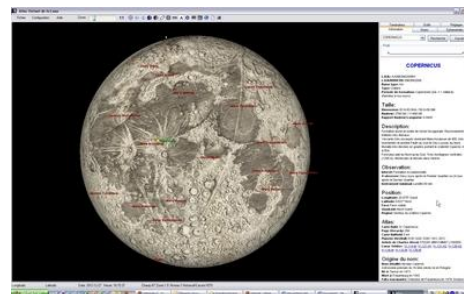
Picture 4 : Full screen for public education events



Picture 5 : Double window with altitude & geology overlay for correlation search



Picture 6 : Sinus Iridum fly over with LRO texture



Picture 7 : Cassini 1679 historical texture

**References**

[1] G. Seronik. (2003) Sky & Telescope.  
[2] R. Bartlett (2003) Astronomy Magazine.  
[3] J.L. Dauvergne (2012) Ciel & Espace