

Significant New Evidence for  
the Location of Plato's  
*Island of Atlas*  
in the Souss Plain  
in today's South Morocco

## **Part 1**

Localizing Archaeomythological Sites -  
a Formal Approach

## **Part 2**

Significant New Evidence for the Location of  
Plato's *Island of Atlas*  
in the Souss Plain in today's South Morocco

# Part 1

## Localizing Archaeomythological Sites

Let's assume that we are searching for an ancient town (or region, country, etc), which is described in a historical or mythological source. We can then derive a set of criteria\* from this source that a site should meet to qualify as a possible location. With this set C and ...

$$\begin{array}{l}
 \textit{Set of Criteria} \quad C = \{ \gamma_1, \dots, \gamma_n \} \\
 \textit{Search Area} \quad A = \begin{bmatrix} a_{1,1} & a_{1,2} & \cdots & a_{1,x} \\ a_{2,1} & a_{2,2} & \cdots & a_{2,x} \\ \vdots & \vdots & \ddots & \vdots \\ a_{y,1} & a_{y,2} & \cdots & a_{y,x} \end{bmatrix}
 \end{array}$$

$$\textit{Hypothesis Support} (m, n) = \frac{1}{|C|} \sum_{\gamma \in C} (w(\gamma) \cdot t(\gamma, m, n))$$

$$\begin{array}{l}
 \textit{Weighting} \quad w(\gamma) = \frac{1}{\sum_x \sum_y t(\gamma, x, y)} \quad \textit{Test} \quad t(\gamma, m, n) = \begin{cases} 1 & \text{if } \gamma \text{ applies to } a_{m,n} \\ 0 & \text{otherwise} \end{cases}
 \end{array}$$

\*) e.g geological, geographical, archaeological, biological, cultural, etc. attributes

# Part 1

## Localizing Archaeomythological Sites - A Formal Approach

$$\text{Set of Criteria } C = \{ \gamma_1, \dots, \gamma_n \}$$

$$\text{Search Area } A = \begin{bmatrix} a_{1,1} & a_{1,2} & \cdots & a_{1,x} \\ a_{2,1} & a_{2,2} & \cdots & a_{2,x} \\ \vdots & \vdots & \ddots & \vdots \\ a_{y,1} & a_{y,2} & \cdots & a_{y,x} \end{bmatrix}$$

... a search area A, which is represented by a 2-dimensional matrix\*, we can easily compute ...

$$\text{Hypothesis Support } (m, n) = \frac{1}{|C|} \sum_{\gamma \in C} (w(\gamma) \cdot t(\gamma, m, n))$$

$$\text{Weighting } w(\gamma) = \frac{1}{\sum_x \sum_y t(\gamma, x, y)} \quad \text{Test } t(\gamma, m, n) = \begin{cases} 1 & \text{if } \gamma \text{ applies to } a_{m,n} \\ 0 & \text{otherwise} \end{cases}$$

\*) just think of a map, which is divided into x\*y subareas

# Part 1

## Localizing Archaeomythological Sites - A Formal Approach

$$\text{Set of Criteria } C = \{ \gamma_1, \dots, \gamma_n \}$$

$$\text{Search Area } A = \begin{bmatrix} a_{1,1} & a_{1,2} & \cdots & a_{1,x} \\ a_{2,1} & a_{2,2} & \cdots & a_{2,x} \\ \vdots & \vdots & \ddots & \vdots \\ a_{y,1} & a_{y,2} & \cdots & a_{y,x} \end{bmatrix}$$

... a hypothesis support value for each subarea  $a_{m,n}$

$$\text{Hypothesis Support } (m, n) = \frac{1}{|C|} \sum_{\gamma \in C} (w(\gamma) \cdot t(\gamma, m, n))$$

$$\text{Weighting } w(\gamma) = \frac{1}{\sum_x \sum_y t(\gamma, x, y)}$$

$$\text{Test } t(\gamma, m, n) = \begin{cases} 1 & \text{if } \gamma \text{ applies to } a_{m,n} \\ 0 & \text{otherwise} \end{cases}$$

# Part 1

## Localizing Archaeomythological Sites - A Formal Approach

$$\text{Set of Criteria } C = \{ \gamma_1, \dots, \gamma_n \}$$

$$\text{Search Area } A = \begin{bmatrix} a_{1,1} & a_{1,2} & \cdots & a_{1,x} \\ a_{2,1} & a_{2,2} & \cdots & a_{2,x} \\ \vdots & \vdots & \ddots & \vdots \\ a_{y,1} & a_{y,2} & \cdots & a_{y,x} \end{bmatrix}$$

Whereby:

$t()$  is a test function, which tests\* if a criteria applies to subarea  $a_{m,n}$  and ...

$$\text{Hypothesis Support } (m, n) = \frac{1}{|C|} \sum_{\gamma \in C} (w(\gamma) \cdot \underline{t(\gamma, m, n)})$$

$$\text{Weighting } w(\gamma) = \frac{1}{\sum_x \sum_y t(\gamma, x, y)}$$

$$\text{Test } \underline{t(\gamma, m, n)} = \begin{cases} 1 & \text{if } \gamma \text{ applies to } a_{m,n} \\ 0 & \text{otherwise} \end{cases}$$

\*) e.g. by querying a knowledge-base

# Part 1

## Localizing Archaeomythological Sites - A Formal Approach

$$\text{Set of Criteria } C = \{ \gamma_1, \dots, \gamma_n \}$$

$$\text{Search Area } A = \begin{bmatrix} a_{1,1} & a_{1,2} & \cdots & a_{1,x} \\ a_{2,1} & a_{2,2} & \cdots & a_{2,x} \\ \vdots & \vdots & \ddots & \vdots \\ a_{y,1} & a_{y,2} & \cdots & a_{y,x} \end{bmatrix}$$

...  $w()$  is a weighting function, which weighs each criteria inversely proportional to its frequency of occurrence within the search area.

$$\text{Hypothesis Support } (m, n) = \frac{1}{|C|} \sum_{\gamma \in C} \underline{w(\gamma)} \cdot t(\gamma, m, n)$$

$$\text{Weighting } \underline{w(\gamma)} = \frac{1}{\sum_x \sum_y t(\gamma, x, y)}$$

$$\text{Test } t(\gamma, m, n) = \begin{cases} 1 & \text{if } \gamma \text{ applies to } a_{m,n} \\ 0 & \text{otherwise} \end{cases}$$

# A Simple Example

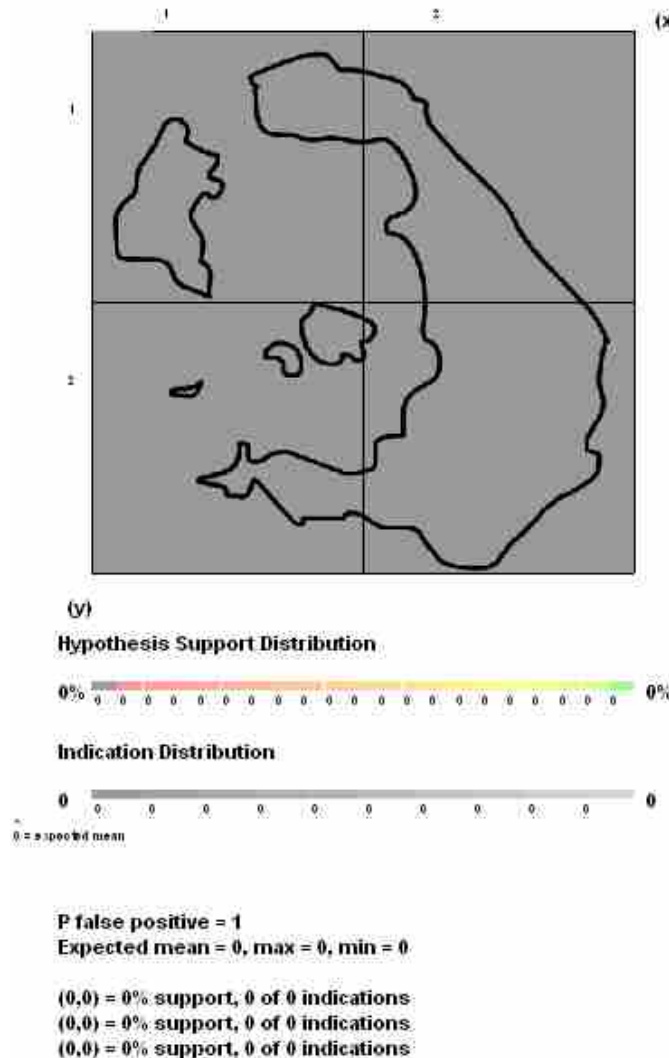


# Part 1

## Localizing Archaeomythological Sites - A Formal Approach

### Example

Searching for Thirasia island



- global
- Thirasia island is in the North (0.5)
- Thirasia island is in the West (0.5)
- Thirasia island can be seen from the Thira Island (0.75)
- Thirasia island is the island in North-West (0.25)

This is a map of the Santorini archipelago, which is divided into 4 subareas  $a_{1,1}$ ,  $a_{1,2}$ ,  $a_{2,1}$  and  $a_{2,2}$

$$A = \begin{bmatrix} a_{1,1} & a_{1,2} \\ a_{2,1} & a_{2,2} \end{bmatrix}$$

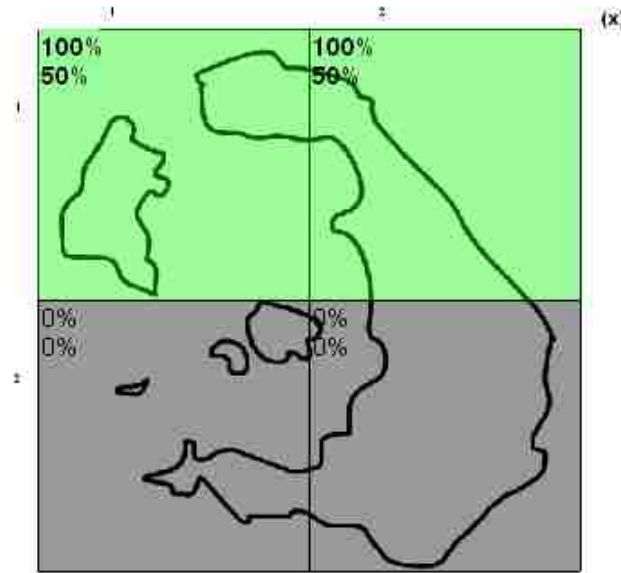
Let's assume that we don't know where Thirasia Island is located within the Santorini archipelago. But we have 4 criteria that describe properties of this island ...

# Part 1

## Localizing Archaeomythological Sites - A Formal Approach

### Example

Searching for Thirasia island

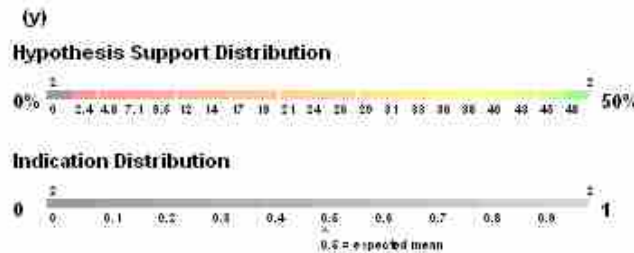


- global
- Thirasia Island is in the North (0.5)
- Thirasia Island is in the West (0.5)
- Thirasia Island can be seen from the Thira Island (0.75)
- Thirasia Island is the island in North-West (0.25)

The first criteria tells us that Thirasia Island is located in the North of the archipelago.

Since we have 2 subareas,  $a_{1,1}$  and  $a_{1,2}$  which meet this criteria, the hypothesis support value for each is 50%.

The upper number (100%) in both subareas tells us that all selected criteria apply.



**P false positive = 0.5**  
**Expected mean = 0.5, max = 1, min = 0**

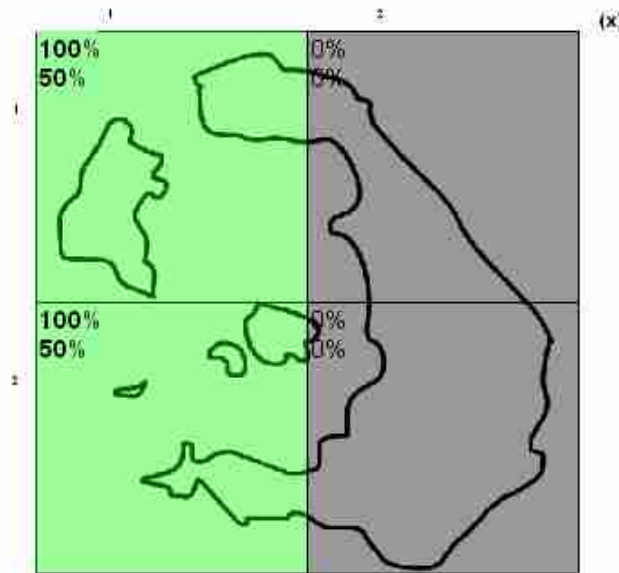
**(1,1) = 50% support, 1 of 1 indications**  
**(2,1) = 50% support, 1 of 1 indications**  
**(0,0) = 0% support, 0 of 1 indications**

# Part 1

## Localizing Archaeomythological Sites - A Formal Approach

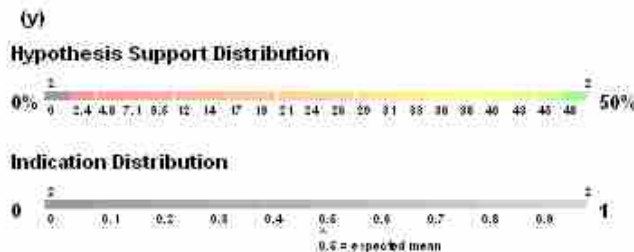
### Example

Searching for Thirasia island



- global
- Thirasia Island is in the North (0.5)
- Thirasia Island is in the West (0.5)
- Thirasia Island can be seen from the Thira Island (0.75)
- Thirasia Island is the island in North-West (0.25)

The second criteria tells us that Thirasia Island is located in the West of the archipelago. Therefore the subareas  $a_{1,1}$  and  $a_{2,1}$  are each supported by 50%.



**P false positive = 0.5**  
**Expected mean = 0.5, max = 1, min = 0**

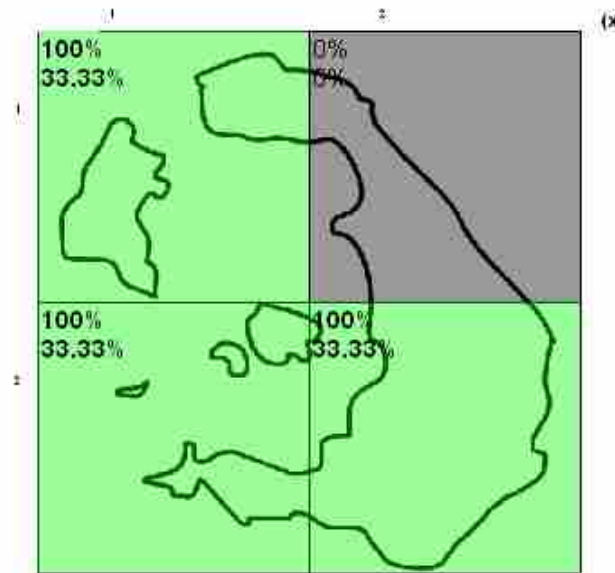
**(1,1) = 50% support, 1 of 1 indications**  
**(1,2) = 50% support, 1 of 1 indications**  
**(0,0) = 0% support, 0 of 1 indications**

# Part 1

## Localizing Archaeomythological Sites - A Formal Approach

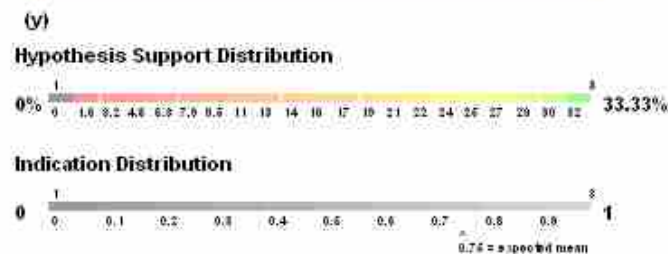
### Example

Searching for Thirasia island



- global
- Thirasia island is in the North (0.5)
- Thirasia island is in the West (0.5)
- Thirasia island can be seen from the Thira Island (0.75)
- Thirasia island is the island in North-West (0.25)

The third criteria tells us that Thirasia Island can be seen from the largest island. Therefore the subareas  $a_{1,1}$ ,  $a_{2,1}$  and  $a_{2,2}$  are supported. This results in a 33.33% hypothesis support value for these subareas.



**P false positive = 0.75**  
**Expected mean = 0.75, max = 1, min = 0**

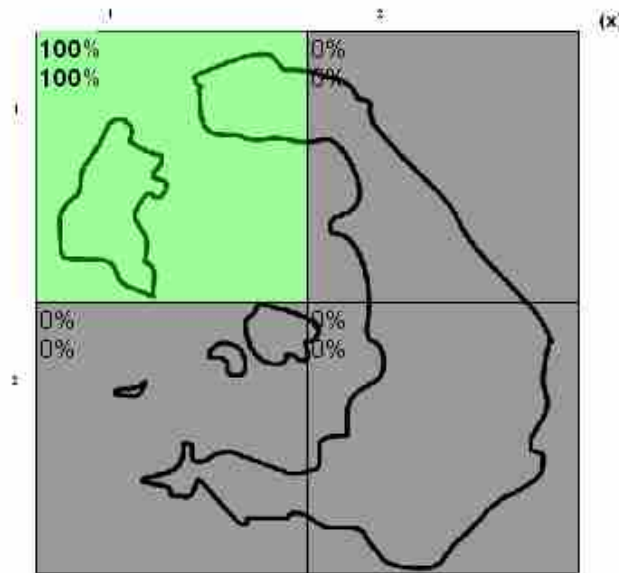
(1,1) = 33.33% support, 1 of 1 indications  
 (1,2) = 33.33% support, 1 of 1 indications  
 (2,2) = 33.33% support, 1 of 1 indications

# Part 1

## Localizing Archaeomythological Sites - A Formal Approach

### Example

Searching for Thirasia island



(x)

- global
- Thirasia island is in the North (0.5)
- Thirasia island is in the West (0.5)
- Thirasia island can be seen from the Thira Island (0.75)
- Thirasia island is the island in North-West (0.25)

The last criteria explicitly tells us that Thirasia Island is located in the North-West. Since this applies only to  $a_{1,1}$ , we have a high weighted hypothesis support value of 100% for  $a_{1,1}$ .

(y)

Hypothesis Support Distribution



Indication Distribution



P false positive = 0.25

Expected mean = 0.25, max = 1, min = 0

(1,1) = 100% support, 1 of 1 indications

(0,0) = 0% support, 0 of 1 indications

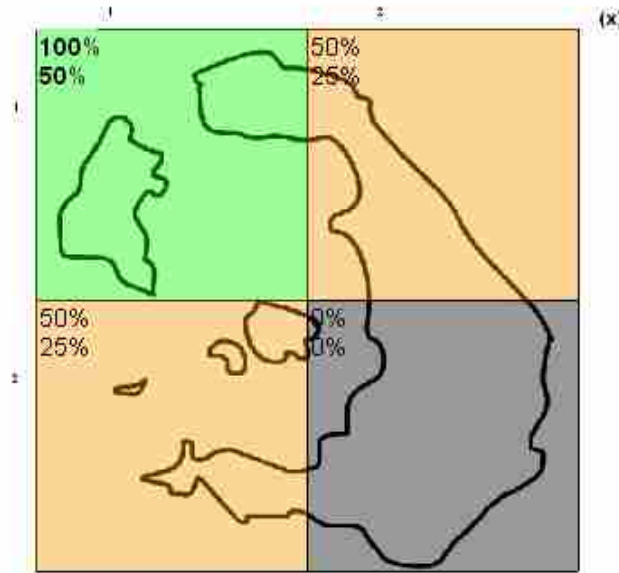
(0,0) = 0% support, 0 of 1 indications

# Part 1

## Localizing Archaeomythological Sites - A Formal Approach

### Example

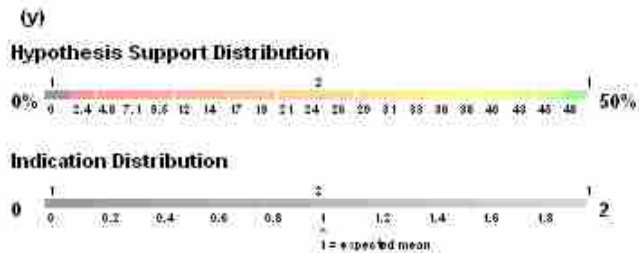
Searching for Thirasia island



- global
- Thirasia island is in the North (0.5)
- Thirasia island is in the West (0.5)
- Thirasia island can be seen from the Thira Island (0.75)
- Thirasia island is the island in North-West (0.25)

If we combine criteria

1 & 2 ...



**P false positive = 0.25**  
**Expected mean = 1, max = 2, min = 0**

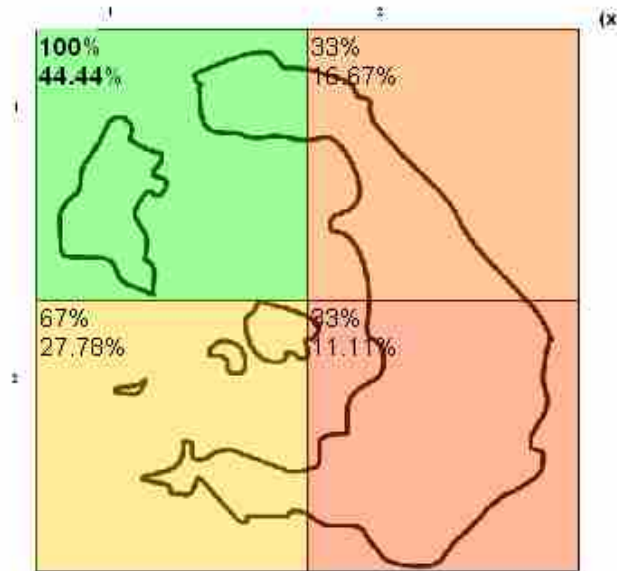
**(1,1) = 50% support, 2 of 2 indications**  
**(2,1) = 25% support, 1 of 2 indications**  
**(1,2) = 25% support, 1 of 2 indications**

# Part 1

## Localizing Archaeomythological Sites - A Formal Approach

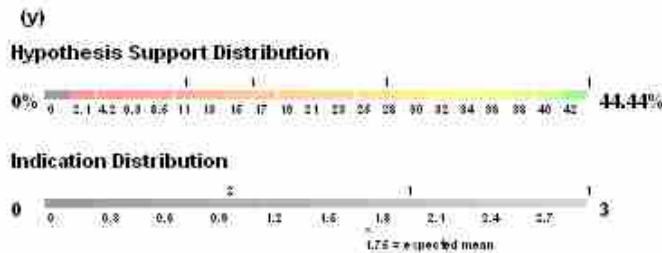
### Example

Searching for Thirasia island



- global
- Thirasia island is in the North (0.5)
- Thirasia island is in the West (0.5)
- Thirasia island can be seen from the Thira Island (0.75)
- Thirasia island is the island in North-West (0.25)

1 & 2 & 3 ...



**P false positive = 0.1875**  
**Expected mean = 1.75, max = 3, min = 1**

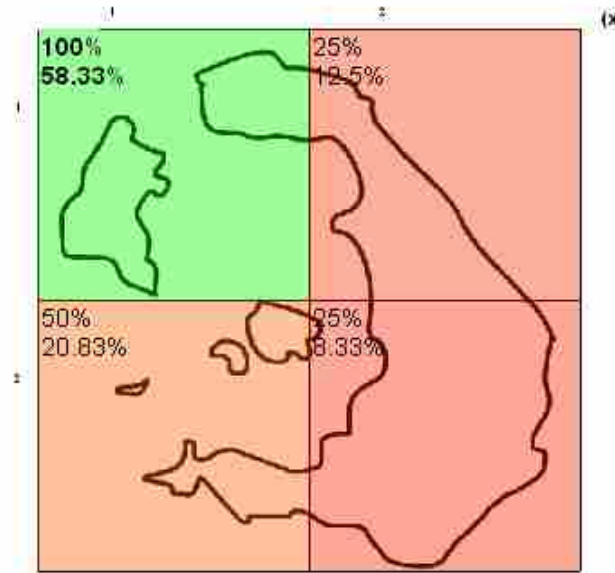
**(1,1) = 44.44% support, 3 of 3 indications**  
**(1,2) = 27.78% support, 2 of 3 indications**  
**(2,1) = 16.67% support, 1 of 3 indications**

# Part 1

## Localizing Archaeomythological Sites - A Formal Approach

### Example

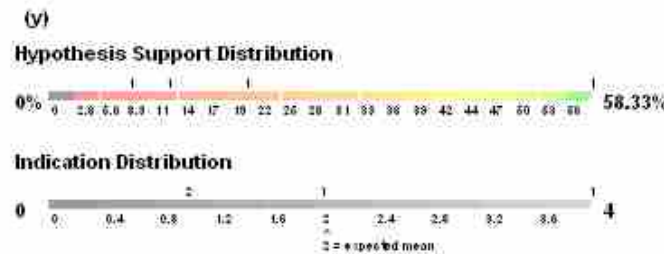
Searching for Thirasia island



- global
- Thirasia island is in the North (0.5)
- Thirasia island is in the West (0.5)
- Thirasia island can be seen from the Thira Island (0.75)
- Thirasia island is the island in North-West (0.25)

1 & 2 & 3 & 4, the highest hypothesis support value of 58,33% (100% of all criteria apply) can be found in  $a_{1,1}$ . Therefore, according to all given criteria, Thirasia Island is most probably located in  $a_{1,1}$ .

$$A = \begin{bmatrix} \underline{a_{1,1}} & a_{1,2} \\ a_{2,1} & a_{2,2} \end{bmatrix}$$



P false positive = 0.046875  
 Expected mean = 2, max = 4, min = 1

(1,1) = 58.33% support, 4 of 4 indications  
 (1,2) = 20.83% support, 2 of 4 indications  
 (2,1) = 12.5% support, 1 of 4 indications

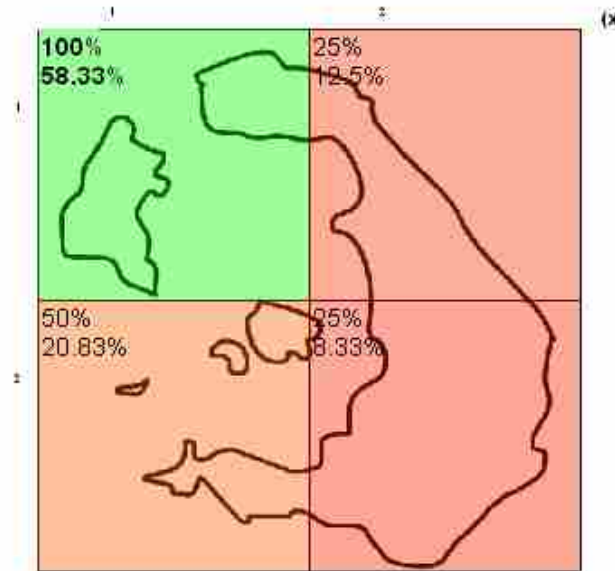


# Part 1

## Localizing Archaeomythological Sites - A Formal Approach

### Example

Searching for Thirasia island



- Global
- Thirasia Island is in the North (0.5)
- Thirasia Island is in the West (0.5)
- Thirasia Island can be seen from the Thira Island (0.75)
- Thirasia Island is the island in North-West (0.25)

The null-hypothesis ( $H_0$ ) for a specific subarea is:  
 „Thirasia Island **is not** located within this subarea“

Based on all criteria-probabilities (0.5, 0.5, 0.75 and 0.25) we can compute the probability of a „false positive“ or „error 1“ for the case that all criteria apply to a specific subarea.

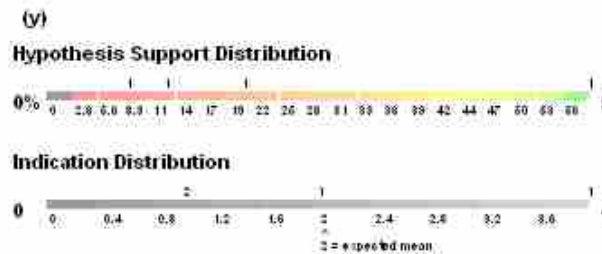
Therefore, if we reject the null-hypothesis for subarea  $a_{1,1}$  and accept the alternative hypothesis:

„Thirasia Island **is** located within this subarea“

we have a probability of 0.046875 that rejecting the null-hypothesis was a wrong decision

Each criteria probability can be computed by this equation:

$$Probability \quad p(\gamma) = \frac{\sum_x \sum_y t(\gamma, x, y)}{xy}$$



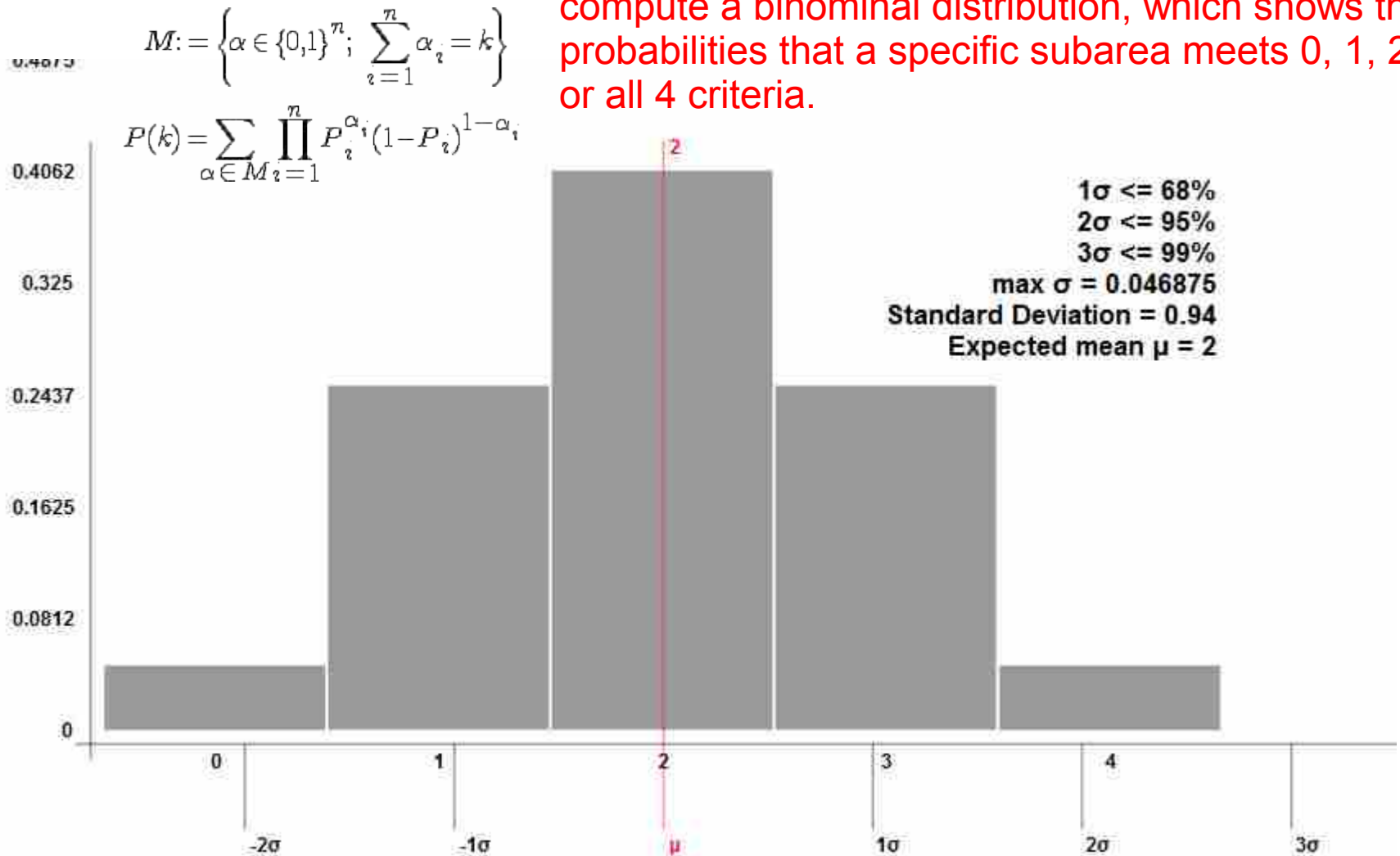
**P false positive = 0.046875**

- (1,1) = 58.33% support, 4 of 4 indications
- (1,2) = 20.83% support, 2 of 4 indications
- (2,1) = 12.5% support, 1 of 4 indications

# Part 1

## Localizing Archaeomythological Sites - A Formal Approach

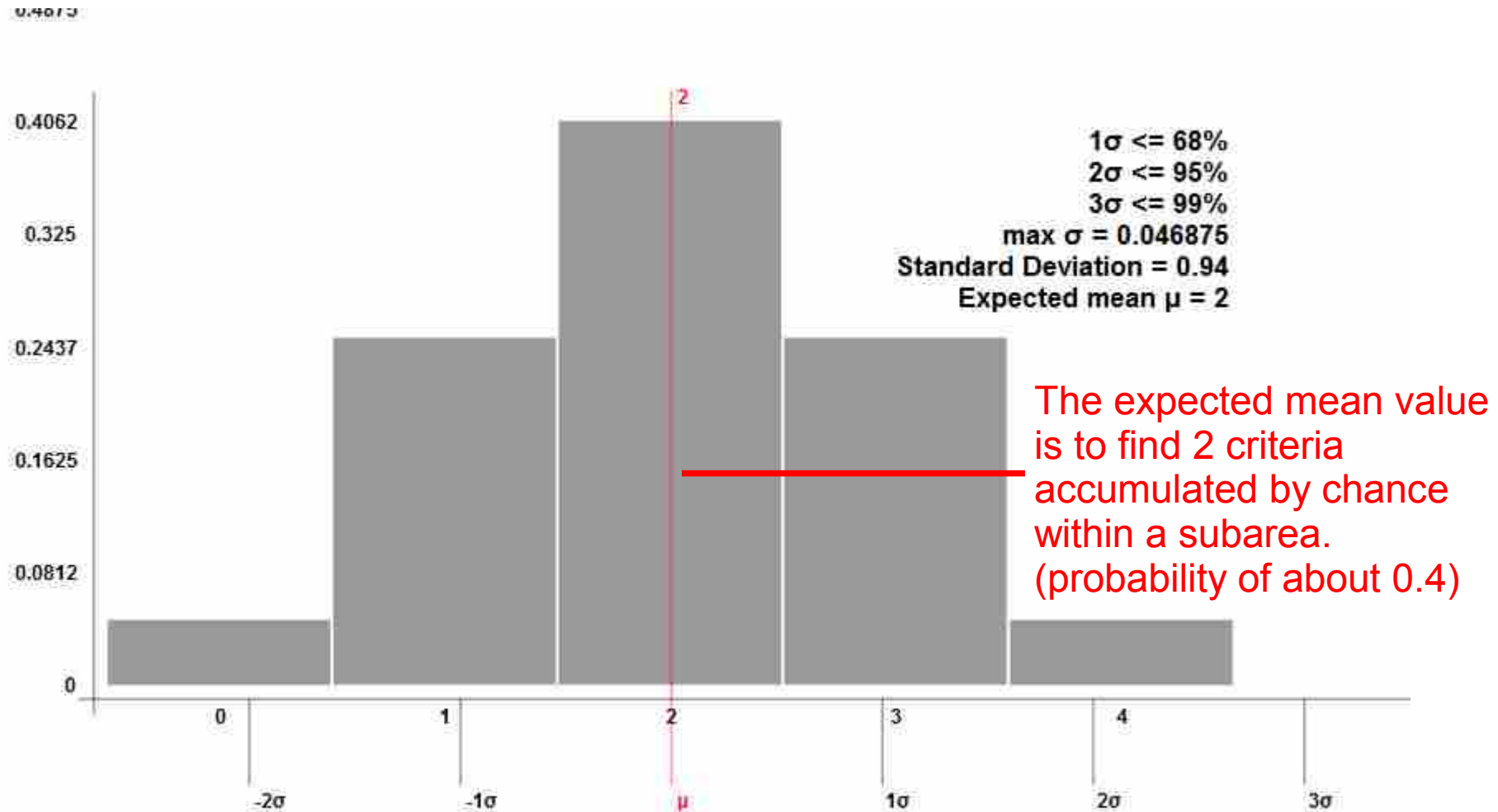
### Binomial Distribution 4 Criteria



# Part 1

## Localizing Archaeomythological Sites - A Formal Approach

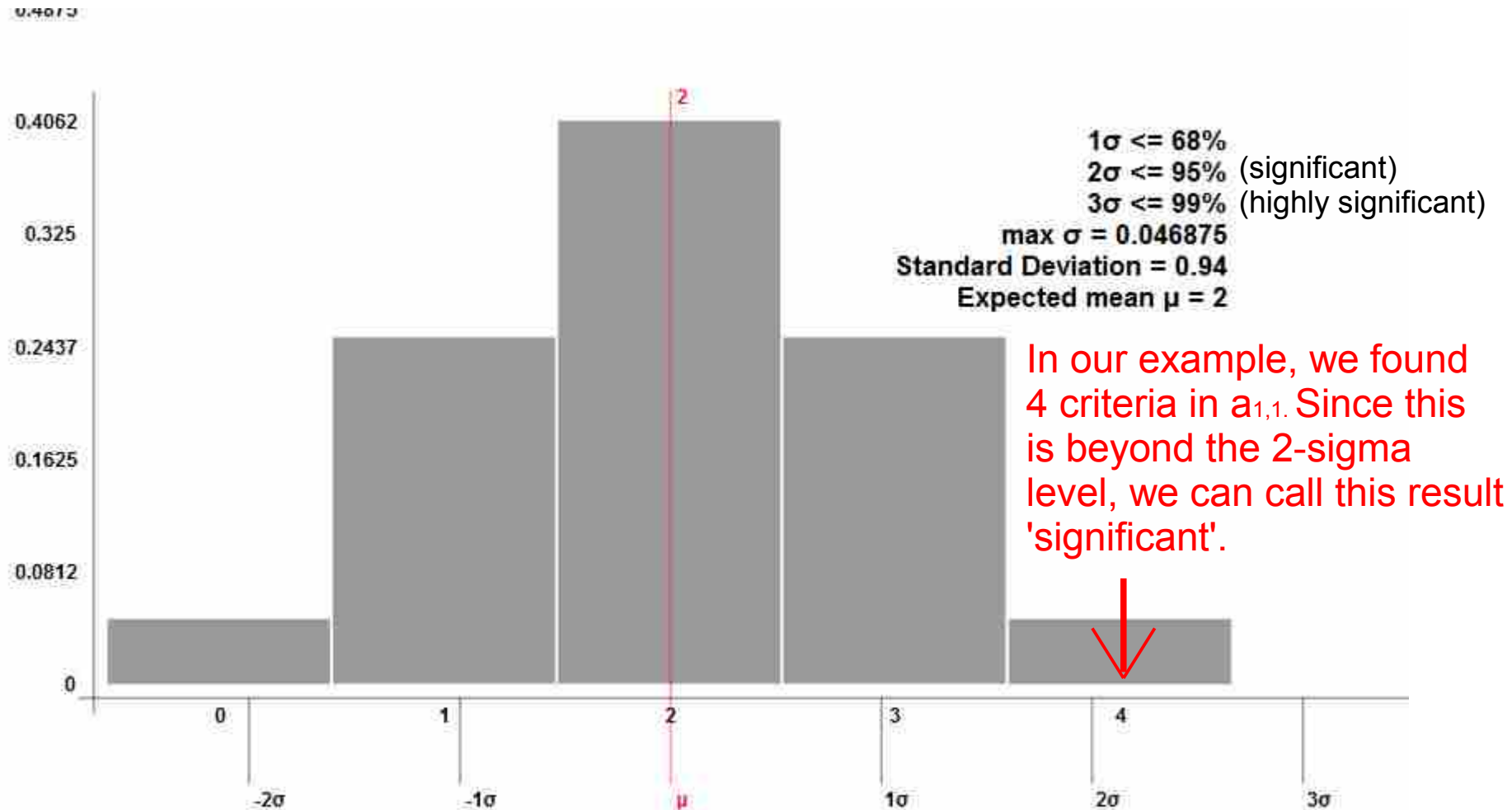
### Binomial Distribution 4 Criteria



# Part 1

## Localizing Archaeomythological Sites - A Formal Approach

### Binomial Distribution 4 Criteria



# Plato

From Plato's accounts *Timaios* and *Critias* we can derive more than 50 criteria that a given site should meet to qualify as a possible location for '*Atlantis Nesos*', the '*Island of Atlas*'.

Please refer to the paper '*Circumstantial Evidence for Plato's Island Atlantis in the Souss-Massa plain in today's South- Morocco*' (Huebner, 2011) for an excerpt of these criteria and please stay tuned for a complete list.

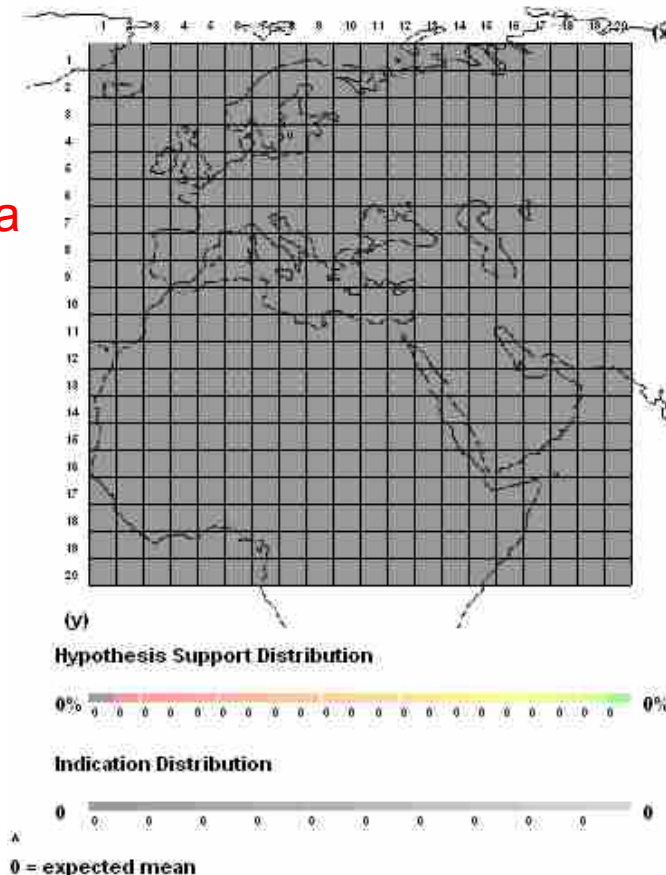
# Part 1

## Localizing Archaeomythological Sites - A Formal Approach

An adequate search area for Atlantis covers Europe and parts of Africa and Asia. \*

Plato

The search area is divided into 20 x 20 = 400 subareas.



- Global
  - Sea/Ocean (0.5175)
  - West of Tyrrhenia/Egypt (0.8075)
  - Elephants (0.625)
  - Strait (0.2625)
  - Not in Asia/Europe (0.5375)
  - Mediterranean/subtropical/tropical flora (0.7)
  - Large mountain range (0.0425)
- Regional
  - Large canals (waterside 1 Plethron, ~30m height) (0.5)
  - Evidence for tsunamis in ancient times (0.5)
  - Cultural importance of odd/even numbers (0.0025)
  - Cultural importance of three concentric circles (0.0025)
  - Presence of red/white/black bedrock (0.5)
  - Region of Gadeira (Agadir) (0.5)
  - Matching names (Atlantis thalassa, Kingname Atlas) (0.5)
  - Smooth plain (0.5)
  - Rectangular plain (long side parallel to the shore) (0.5)
  - Size of the plain (3000x2000 Stadia) (0.5)
  - Island (0.5)
  - Size of island (0.5)
  - Fruits (particular legumes) (0.5)
  - Ore (silver/gold/copper/iron) (0.5)
  - Geological active zone (heavy earthquakes) (0.5)
  - Presence of horses in prehistoric times (0.5)
  - Presence of chariots in prehistoric times (0.5)
  - Located 'beyond' the Pillars of Heracles (0.5)
  - Streams from the mountains (0.5)
  - Year-around water supply (0.5)
  - Canal parallel to the shore (0.5)
  - Fragrant roots (0.5)
  - Sacrifice of bulls (0.5)
  - Dark blue clothes/dye (0.5)
  - Prevailing winds from the North (0.5)
  - North-wind protection (0.5)
  - Trees which afford liquid and solid food and unguent
- Local
  - Annular shape of the structure (0.005)
  - Three concentric circles (0)
  - Distance from the structure to the sea (~50 Stadia) (0)
  - Central hill (akropolis) within the structure (0.0025)
  - Diameter of structure (~27 Stades) (0.0025)
  - Prehistoric settlement within the structure (0.0025)
  - Dimension of settlement is town-sized (0.0025)
  - Water sources (springs/wells) warm and cold on the city wall (0.0025)
  - Reddish sparkling plaster on city wall (0.0025)
  - Presence of cisterns/water reservoirs (0.0025)
  - Architecture (red/white/black stones) (0.0025)

All criteria are classified and assigned to global, regional or local criteria classes. \*\*

\* This covers an area of about 5,000 km radius around Athens. If we can not find Atlantis here, we can enlarge the search area. The criteria „Atlantis should be located within a reasonable range from Athens“ was also declared as a condition at the International Atlantis Conference 2005 in Athens.

\*\* See also section 'Hierarchical Constraint Satisfaction' in (Huebner, 2011)

# Part 1

## Localizing Archaeomythological Sites - A Formal Approach

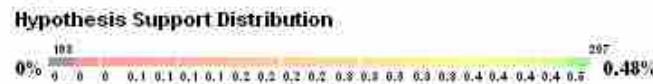
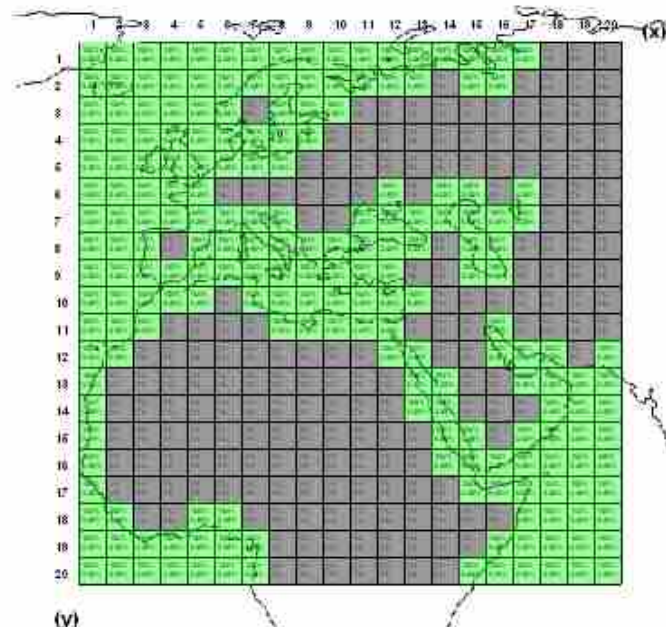
Plato

### Global criteria:

*Atlantis should be located close to a sea or ocean.*

This criteria applies to approx. 51% of all subareas.

Note: The green surface contains all subareas, which cover sea or coastal regions. It is more probable that Atlantis is located somewhere within these subareas than within the gray subareas (interior of a large land surface).



P false positive = 0.5175  
 Expected mean = 0.5175, max = 1, min = 0

(1,1) = 0.48% support, 1 of 1 indications  
 (2,1) = 0.48% support, 1 of 1 indications  
 (3,1) = 0.48% support, 1 of 1 indications

- global
  - Sea/Ocean (0.5175)
  - West of Tyrrhenia/Egypt (0.8075)
  - Elephants (0.625)
  - Strait (0.2625)
  - Not in Asia/Europe (0.5375)
  - Mediterranean/subtropical/tropical flora (0.7)
  - Large mountain range (0.0425)
- regional
  - Large canals (waterside 1 Plethron, ~30m height) (0.5)
  - Evidence for tsunamis in ancient times (0.5)
  - Cultural importance of odd/even numbers (0.0025)
  - Cultural importance of three concentric circles (0.0025)
  - Presence of red/white/black bedrock (0.5)
  - Region of Gaderios (Agadir) (0.5)
  - Matching names (Atlantis thalassa, Kingname Atlas) (0.5)
  - Smooth plain (0.5)
  - Rectangular plain (long side parallel to the shore) (0.5)
  - Size of the plain (3000x2000 Stadia) (0.5)
  - Island (0.5)
  - Size of island (0.5)
  - Fruits (particular legumes) (0.5)
  - Ore (silver/gold/copper/iron) (0.5)
  - Geological active zone (heavy earthquakes) (0.5)
  - Presence of horses in prehistoric times (0.5)
  - Presence of chariots in prehistoric times (0.5)
  - Located 'beyond' the Pillars of Heracles (0.5)
  - Streams from the mountains (0.5)
  - Year-around water supply (0.5)
  - Canal parallel to the shore (0.5)
  - Fragrant roots (0.5)
  - Sacrifice of bulls (0.5)
  - Dark blue clothes/dye (0.5)
  - Prevailing winds from the North (0.5)
  - North-wind protection (0.5)
  - Trees which afford liquid and solid food and unguent
- total
  - Annular shape of the structure (0.005)
  - Three concentric circles (0)
  - Distance from the structure to the sea (~50 Stadia) (0)
  - Central hill (akropolis) within the structure (0.0025)
  - Diameter of structure (~27 Stades) (0.0025)
  - Prehistoric settlement within the structure (0.0025)
  - Dimension of settlement is town-sized (0.0025)
  - Water sources (springs/wells) warm and cold on the city wall (0.0025)
  - Reddish sparkling plaster on city wall (0.0025)
  - Presence of cisterns/water reservoirs (0.0025)
  - Architecture (red/white/black stones) (0.0025)
  - Docks cut into red/white/black bedrock (0.0025)
  - Racecourse for horses (0.0025)

# Part 1

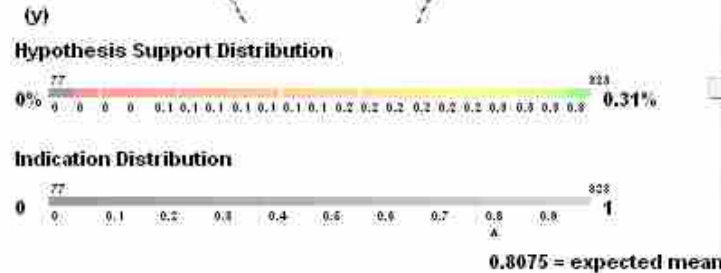
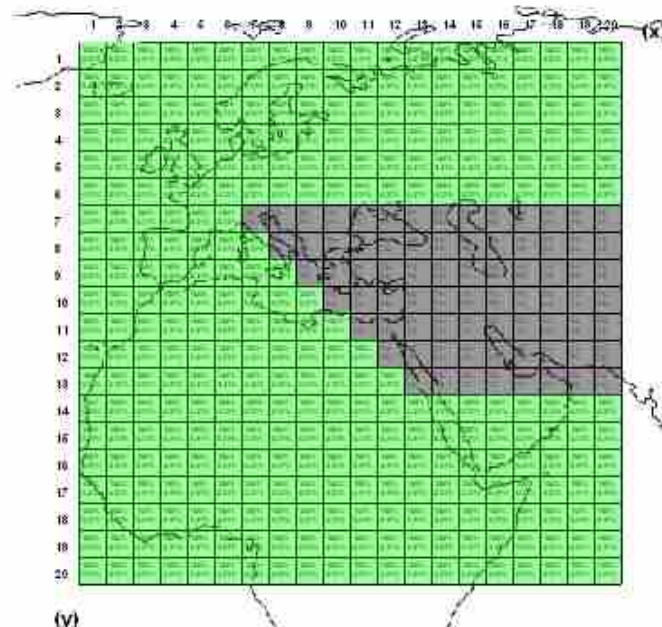
## Localizing Archaeomythological Sites - A Formal Approach

Plato

Global criteria:

*Atlantis should be located west of Tyrrhenia and Egypt.*

This criteria applies to approx. 80% of all subareas.



P false positive = 0.8075  
 Expected mean = 0.8075, max = 1, min = 0

(1,1) = 0.31% support, 1 of 1 indications  
 (2,1) = 0.31% support, 1 of 1 indications  
 (3,1) = 0.31% support, 1 of 1 indications

- global
  - Sea/Ocean (0.5175)
  - West of Tyrrhenia/Egypt (0.8075)
  - Elephants (0.625)
  - Strait (0.2625)
  - Not in Asia/Europe (0.5375)
  - Mediterranean/subtropical/tropical flora (0.7)
  - Large mountain range (0.0425)
- regional
  - Large canals (waterside 1 Plethron, ~30m height) (0.5)
  - Evidence for tsunamis in ancient times (0.5)
  - Cultural importance of odd/even numbers (0.0025)
  - Cultural importance of three concentric circles (0.0025)
  - Presence of red/white/black bedrock (0.5)
  - Region of Gadeira (Agadir) (0.5)
  - Matching names (Atlantis thalassa, Kingname Atlas) (0.5)
  - Smooth plain (0.5)
  - Rectangular plain (long side parallel to the shore) (0.5)
  - Size of the plain (3000x2000 Stadia) (0.5)
  - Island (0.5)
  - Size of island (0.5)
  - Fruits (particular legumes) (0.5)
  - Ore (silver/gold/copper/iron) (0.5)
  - Geological active zone (heavy earthquakes) (0.5)
  - Presence of horses in prehistoric times (0.5)
  - Presence of chariots in prehistoric times (0.5)
  - Located 'beyond' the Pillars of Heracles (0.5)
  - Streams from the mountains (0.5)
  - Year-around water supply (0.5)
  - Canal parallel to the shore (0.5)
  - Fragrant roots (0.5)
  - Sacrifice of bulls (0.5)
  - Dark blue clothes/dye (0.5)
  - Prevailing winds from the North (0.5)
  - North-wind protection (0.5)
  - Trees which afford liquid and solid food and unguent
- local
  - Annular shape of the structure (0.005)
  - Three concentric circles (0)
  - Distance from the structure to the sea (~50 Stadia) (0)
  - Central hill (akropolis) within the structure (0.0025)
  - Diameter of structure (~27 Stades) (0.0025)
  - Prehistoric settlement within the structure (0.0025)
  - Dimension of settlement is town-sized (0.0025)
  - Water sources (springs/wells) warm and cold on the city wall (0.0025)
  - Reddish sparkling plaster on city wall (0.0025)
  - Presence of cisterns/water reservoirs (0.0025)
  - Architecture (red/white/black stones) (0.0025)
  - Docks cut into red/white/black bedrock (0.0025)
  - Racecourse for horses (0.0025)



# Part 1

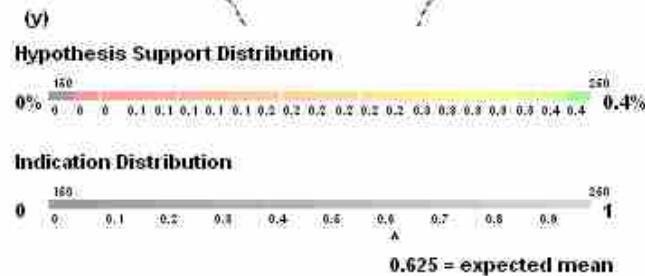
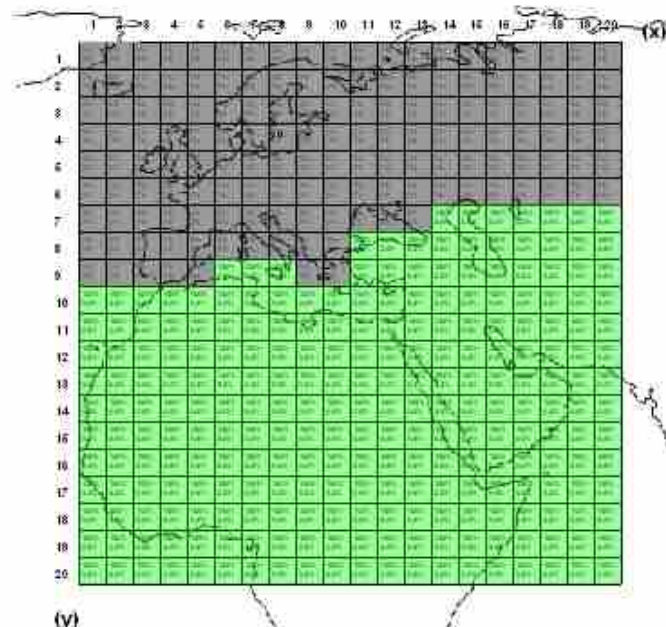
## Localizing Archaeomythological Sites - A Formal Approach

Plato

Global criteria:

*Atlantis should be located where elephants lived.*

This criteria applies to approx. 62% of all subareas.



P false positive = 0.625  
 Expected mean = 0.625, max = 1, min = 0

(14,7) = 0.4% support, 1 of 1 indications  
 (15,7) = 0.4% support, 1 of 1 indications  
 (16,7) = 0.4% support, 1 of 1 indications

- global
  - Sea/Ocean (0.5175)
  - West of Tyrrhenia/Egypt (0.8075)
  - ✓ Elephants (0.625)
  - Strait (0.2625)
  - Not in Asia/Europe (0.5375)
  - Mediterranean/subtropical/tropical flora (0.7)
  - Large mountain range (0.0425)
- regional
  - Large canals (waterside 1 Plethron, ~30m height) (0.5)
  - Evidence for tsunamis in ancient times (0.5)
  - Cultural importance of odd/even numbers (0.0025)
  - Cultural importance of three concentric circles (0.0025)
  - Presence of red/white/black bedrock (0.5)
  - Region of Gadeiros (Agadir) (0.5)
  - Matching names (Atlantis thalassa, Kingname Atlas) (0.5)
  - Smooth plain (0.5)
  - Rectangular plain (long side parallel to the shore) (0.5)
  - Size of the plain (3000x2000 Stadia) (0.5)
  - Island (0.5)
  - Size of island (0.5)
  - Fruits (particular legumes) (0.5)
  - Ore (silver/gold/copper/iron) (0.5)
  - Geological active zone (heavy earthquakes) (0.5)
  - Presence of horses in prehistoric times (0.5)
  - Presence of chariots in prehistoric times (0.5)
  - Located 'beyond' the Pillars of Heracles (0.5)
  - Streams from the mountains (0.5)
  - Year-around water supply (0.5)
  - Canal parallel to the shore (0.5)
  - Fragrant roots (0.5)
  - Sacrifice of bulls (0.5)
  - Dark blue clothes/dye (0.5)
  - Prevailing winds from the North (0.5)
  - North-wind protection (0.5)
  - Trees which afford liquid and solid food and unguent
- total
  - Annular shape of the structure (0.005)
  - Three concentric circles (0)
  - Distance from the structure to the sea (~50 Stadia) (0)
  - Central hill (akropolis) within the structure (0.0025)
  - Diameter of structure (~27 Stades) (0.0025)
  - Prehistoric settlement within the structure (0.0025)
  - Dimension of settlement is town-sized (0.0025)
  - Water sources (springs/wells) warm and cold on the city wall (0.0025)
  - Reddish sparkling plaster on city wall (0.0025)
  - Presence of cisterns/water reservoirs (0.0025)
  - Architecture (red/white/black stones) (0.0025)
  - Docks cut into red/white/black bedrock (0.0025)
  - Racecourse for horses (0.0025)

# Part 1

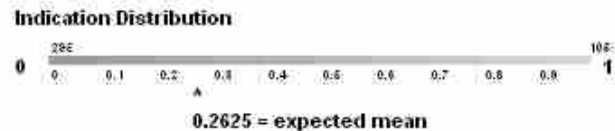
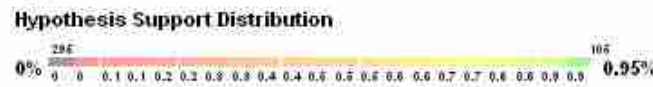
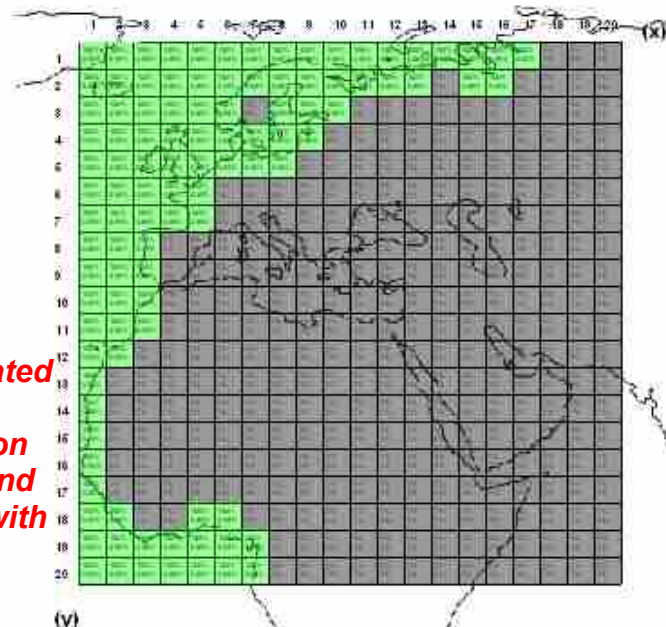
## Localizing Archaeomythological Sites - A Formal Approach

Plato

### Global criteria:

*Atlantis should be located close to a sea/ocean, which is large in relation to the Mediterranean and connected by a strait with the Mediterranean.*

This criteria applies to approx. 26% of all subareas.



P false positive = 0.2625  
 Expected mean = 0.2625, max = 1, min = 0

(1,1) = 0.95% support, 1 of 1 indications  
 (2,1) = 0.95% support, 1 of 1 indications  
 (3,1) = 0.95% support, 1 of 1 indications

- global
  - Sea/Ocean (0.5175)
  - West of Tyrrhenia/Egypt (0.8075)
  - Elephants (0.625)
  - ✓ Strait (0.2625)
  - Not in Asia/Europe (0.5375)
  - Mediterranean/subtropical/tropical flora (0.7)
  - Large mountain range (0.0425)
- regional
  - Large canals (waterside 1 Plethron, ~30m height) (0.5)
  - Evidence for tsunamis in ancient times (0.5)
  - Cultural importance of odd/even numbers (0.0025)
  - Cultural importance of three concentric circles (0.0025)
  - Presence of red/white/black bedrock (0.5)
  - Region of Gaderios (Agadir) (0.5)
  - Matching names (Atlantis thalassa, Kingname Atlas) (0.5)
  - Smooth plain (0.5)
  - Rectangular plain (long side parallel to the shore) (0.5)
  - Size of the plain (3000x2000 Stadia) (0.5)
  - Island (0.5)
  - Size of island (0.5)
  - Fruits (particular legumes) (0.5)
  - Ore (silver/gold/copper/iron) (0.5)
  - Geological active zone (heavy earthquakes) (0.5)
  - Presence of horses in prehistoric times (0.5)
  - Presence of chariots in prehistoric times (0.5)
  - Located 'beyond' the Pillars of Heracles (0.5)
  - Streams from the mountains (0.5)
  - Year-around water supply (0.5)
  - Canal parallel to the shore (0.5)
  - Fragrant roots (0.5)
  - Sacrifice of bulls (0.5)
  - Dark blue clothes/dye (0.5)
  - Prevailing winds from the North (0.5)
  - North-wind protection (0.5)
  - Trees which afford liquid and solid food and unguent
- total
  - Annular shape of the structure (0.005)
  - Three concentric circles (0)
  - Distance from the structure to the sea (~50 Stadia) (0)
  - Central hill (akropolis) within the structure (0.0025)
  - Diameter of structure (~27 Stades) (0.0025)
  - Prehistoric settlement within the structure (0.0025)
  - Dimension of settlement is town-sized (0.0025)
  - Water sources (springs/wells) warm and cold on the city wall (0.0025)
  - Reddish sparkling plaster on city wall (0.0025)
  - Presence of cisterns/water reservoirs (0.0025)
  - Architecture (red/white/black stones) (0.0025)
  - Docks cut into red/white/black bedrock (0.0025)
  - Racecourse for horses (0.0025)

# Part 1

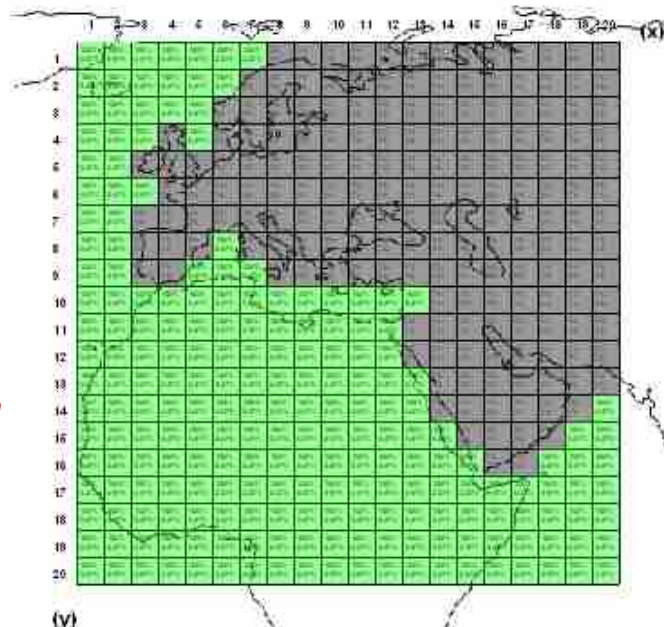
## Localizing Archaeomythological Sites - A Formal Approach

Plato

### Global criteria:

*Atlantis should not be located in Ancient Asia or Europe*

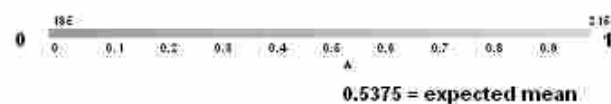
This criteria applies to approx. 53% of all subareas.



Hypothesis Support Distribution



Indication Distribution



P false positive = 0.5375  
 Expected mean = 0.5375, max = 1, min = 0

(1,1) = 0.47% support, 1 of 1 indications  
 (2,1) = 0.47% support, 1 of 1 indications  
 (3,1) = 0.47% support, 1 of 1 indications

- global
  - Sea/Ocean (0.5175)
  - West of Tyrrhenia/Egypt (0.8075)
  - Elephants (0.625)
  - Strait (0.2625)
  - Not in Asia/Europe (0.5375)
  - Mediterranean/subtropical/tropical flora (0.7)
  - Large mountain range (0.0425)
- regional
  - Large canals (waterside 1 Plethron, ~30m height) (0.5)
  - Evidence for tsunamis in ancient times (0.5)
  - Cultural importance of odd/even numbers (0.0025)
  - Cultural importance of three concentric circles (0.0025)
  - Presence of red/white/black bedrock (0.5)
  - Region of Gaderos (Agadir) (0.5)
  - Matching names (Atlantis thalassa, Kingname Atlas) (0.5)
  - Smooth plain (0.5)
  - Rectangular plain (long side parallel to the shore) (0.5)
  - Size of the plain (3000x2000 Stadia) (0.5)
  - Island (0.5)
  - Size of island (0.5)
  - Fruits (particular legumes) (0.5)
  - Ore (silver/gold/copper/iron) (0.5)
  - Geological active zone (heavy earthquakes) (0.5)
  - Presence of horses in prehistoric times (0.5)
  - Presence of chariots in prehistoric times (0.5)
  - Located 'beyond' the Pillars of Heracles (0.5)
  - Streams from the mountains (0.5)
  - Year-around water supply (0.5)
  - Canal parallel to the shore (0.5)
  - Fragrant roots (0.5)
  - Sacrifice of bulls (0.5)
  - Dark blue clothes/dye (0.5)
  - Prevailing winds from the North (0.5)
  - North-wind protection (0.5)
  - Trees which afford liquid and solid food and unguent
- total
  - Annular shape of the structure (0.005)
  - Three concentric circles (0)
  - Distance from the structure to the sea (~50 Stadia) (0)
  - Central hill (akropolis) within the structure (0.0025)
  - Diameter of structure (~27 Stades) (0.0025)
  - Prehistoric settlement within the structure (0.0025)
  - Dimension of settlement is town-sized (0.0025)
  - Water sources (springs/wells) warm and cold on the city wall (0.0025)
  - Reddish sparkling plaster on city wall (0.0025)
  - Presence of cisterns/water reservoirs (0.0025)
  - Architecture (red/white/black stones) (0.0025)
  - Docks cut into red/white/black bedrock (0.0025)
  - Racecourse for horses (0.0025)

# Part 1

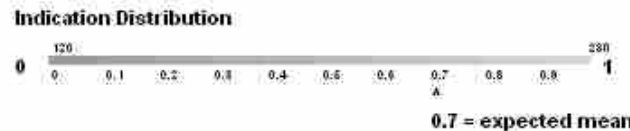
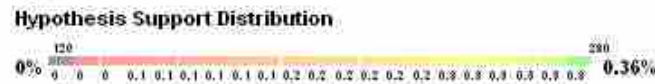
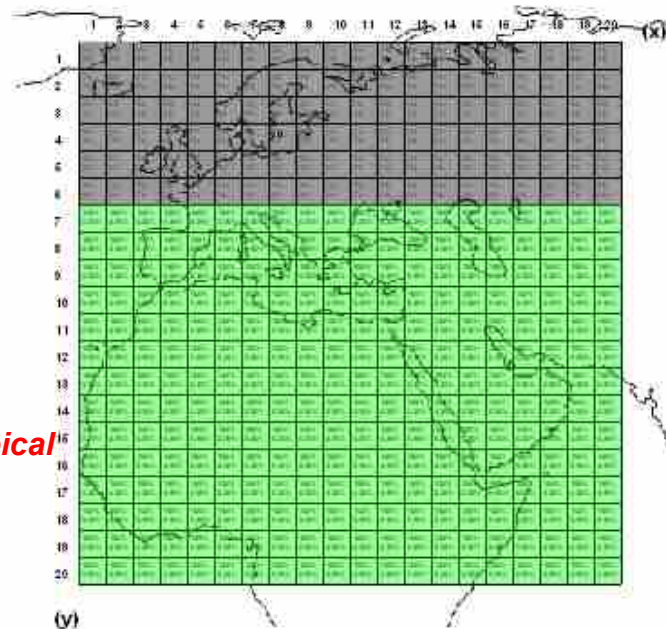
## Localizing Archaeomythological Sites - A Formal Approach

Plato

### Global criteria:

*Atlantis should be located in an area with Mediterranean/subtropical or tropical flora*

This criteria applies to approx. 70% of all subareas.



P false positive = 0.7  
 Expected mean = 0.7, max = 1, min = 0

(1,7) = 0.36% support, 1 of 1 indications  
 (2,7) = 0.36% support, 1 of 1 indications  
 (3,7) = 0.36% support, 1 of 1 indications

- global
  - Sea/Ocean (0.5175)
  - West of Tyrrhenia/Egypt (0.8075)
  - Elephants (0.625)
  - Strait (0.2625)
  - Not in Asia/Europe (0.5375)
  - Mediterranean/subtropical/tropical flora (0.7)
  - Large mountain range (0.0425)
- regional
  - Large canals (waterside 1 Plethron, ~30m height) (0.5)
  - Evidence for tsunamis in ancient times (0.5)
  - Cultural importance of odd/even numbers (0.0025)
  - Cultural importance of three concentric circles (0.0025)
  - Presence of red/white/black bedrock (0.5)
  - Region of Gadeiros (Agadir) (0.5)
  - Matching names (Atlantis thalassa, Kingname Atlas) (0.5)
  - Smooth plain (0.5)
  - Rectangular plain (long side parallel to the shore) (0.5)
  - Size of the plain (3000x2000 Stadia) (0.5)
  - Island (0.5)
  - Size of island (0.5)
  - Fruits (particular legumes) (0.5)
  - Ore (silver/gold/copper/iron) (0.5)
  - Geological active zone (heavy earthquakes) (0.5)
  - Presence of horses in prehistoric times (0.5)
  - Presence of chariots in prehistoric times (0.5)
  - Located 'beyond' the Pillars of Heracles (0.5)
  - Streams from the mountains (0.5)
  - Year-around water supply (0.5)
  - Canal parallel to the shore (0.5)
  - Fragrant roots (0.5)
  - Sacrifice of bulls (0.5)
  - Dark blue clothes/dye (0.5)
  - Prevailing winds from the North (0.5)
  - North-wind protection (0.5)
  - Trees which afford liquid and solid food and unguent
- total
  - Annular shape of the structure (0.005)
  - Three concentric circles (0)
  - Distance from the structure to the sea (~50 Stadia) (0)
  - Central hill (akropolis) within the structure (0.0025)
  - Diameter of structure (~27 Stades) (0.0025)
  - Prehistoric settlement within the structure (0.0025)
  - Dimension of settlement is town-sized (0.0025)
  - Water sources (springs/wells) warm and cold on the city wall (0.0025)
  - Reddish sparkling plaster on city wall (0.0025)
  - Presence of cisterns/water reservoirs (0.0025)
  - Architecture (red/white/black stones) (0.0025)
  - Docks cut into red/white/black bedrock (0.0025)
  - Racecourse for horses (0.0025)

# Part 1

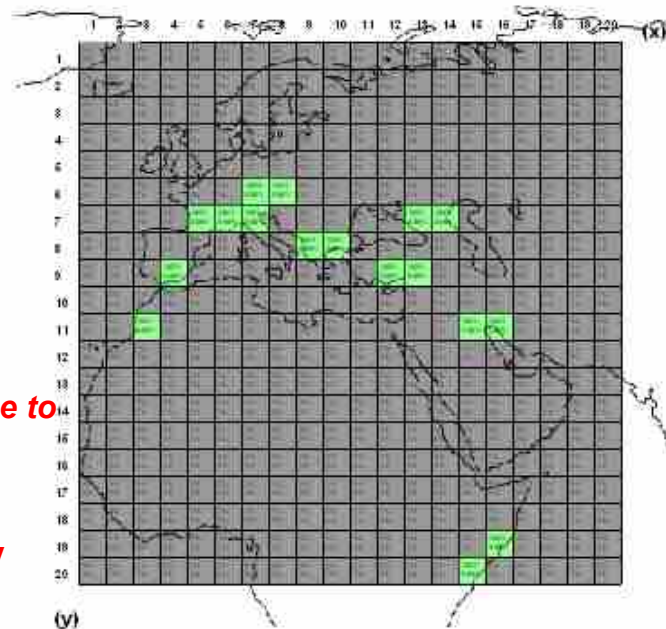
## Localizing Archaeomythological Sites - A Formal Approach

Plato

Global criteria:

*Atlantis' main plain should be located close to and south of high mountains.*

This criteria applies **only** to approx. 4% of all subareas.



Hypothesis Support Distribution



Indication Distribution



0.0425 = expected mean

P false positive = 0.0425

Expected mean = 0.0425, max = 1, min = 0

(7,6) = 5.88% support, 1 of 1 indications

(8,6) = 5.88% support, 1 of 1 indications

(5,7) = 5.88% support, 1 of 1 indications

- global
  - Sea/Ocean (0.5175)
  - West of Tyrrhenia/Egypt (0.8075)
  - Elephants (0.625)
  - Strait (0.2625)
  - Not in Asia/Europe (0.5375)
  - Mediterranean/subtropical/tropical flora (0.7)
  - Large mountain range (0.0425)
- regional
  - Large canals (waterside 1 Plethron, ~30m height) (0.5)
  - Evidence for tsunamis in ancient times (0.5)
  - Cultural importance of odd/even numbers (0.0025)
  - Cultural importance of three concentric circles (0.0025)
  - Presence of red/white/black bedrock (0.5)
  - Region of Gaderos (Agadir) (0.5)
  - Matching names (Atlantis thalassa, Kingname Atlas) (0.5)
  - Smooth plain (0.5)
  - Rectangular plain (long side parallel to the shore) (0.5)
  - Size of the plain (3000x2000 Stadia) (0.5)
  - Island (0.5)
  - Size of island (0.5)
  - Fruits (particular legumes) (0.5)
  - Ore (silver/gold/copper/iron) (0.5)
  - Geological active zone (heavy earthquakes) (0.5)
  - Presence of horses in prehistoric times (0.5)
  - Presence of chariots in prehistoric times (0.5)
  - Located 'beyond' the Pillars of Heracles (0.5)
  - Streams from the mountains (0.5)
  - Year-around water supply (0.5)
  - Canal parallel to the shore (0.5)
  - Fragrant roots (0.5)
  - Sacrifice of bulls (0.5)
  - Dark blue clothes/dye (0.5)
  - Prevailing winds from the North (0.5)
  - North-wind protection (0.5)
  - Trees which afford liquid and solid food and unguent
- total
  - Annular shape of the structure (0.005)
  - Three concentric circles (0)
  - Distance from the structure to the sea (~50 Stadia) (0.0025)
  - Central hill (akropolis) within the structure (0.0025)
  - Diameter of structure (~27 Stades) (0.0025)
  - Prehistoric settlement within the structure (0.0025)
  - Dimension of settlement is town-sized (0.0025)
  - Water sources (springs/wells) warm and cold on the city wall (0.0025)
  - Reddish sparkling plaster on city wall (0.0025)
  - Presence of cisterns/water reservoirs (0.0025)
  - Architecture (red/white/black stones) (0.0025)
  - Docks cut into red/white/black bedrock (0.0025)
  - Racecourse for horses (0.0025)

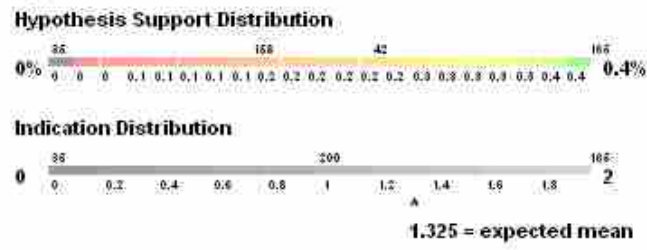
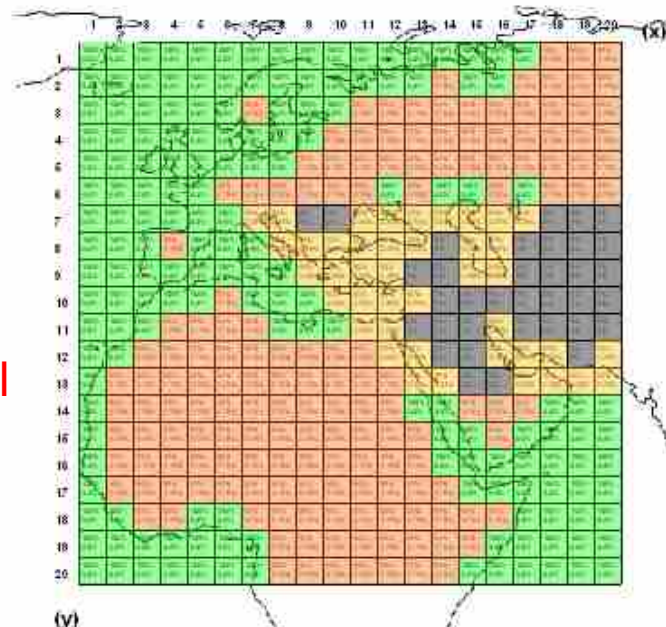
# Part 1

## Localizing Archaeomythological Sites - A Formal Approach

Plato

Global criteria:  
 If we combine all  
 global criteria

...



**P false positive = 0.41783125**  
**Expected mean = 1.325, max = 2, min = 0**

**(1,1) = 0.4% support, 2 of 2 indications**  
**(2,1) = 0.4% support, 2 of 2 indications**  
**(3,1) = 0.4% support, 2 of 2 indications**

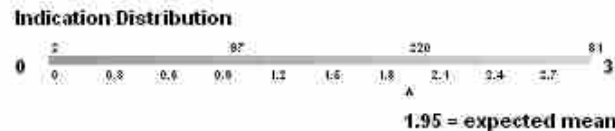
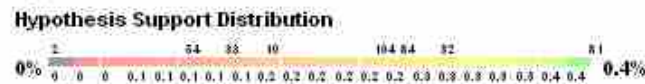
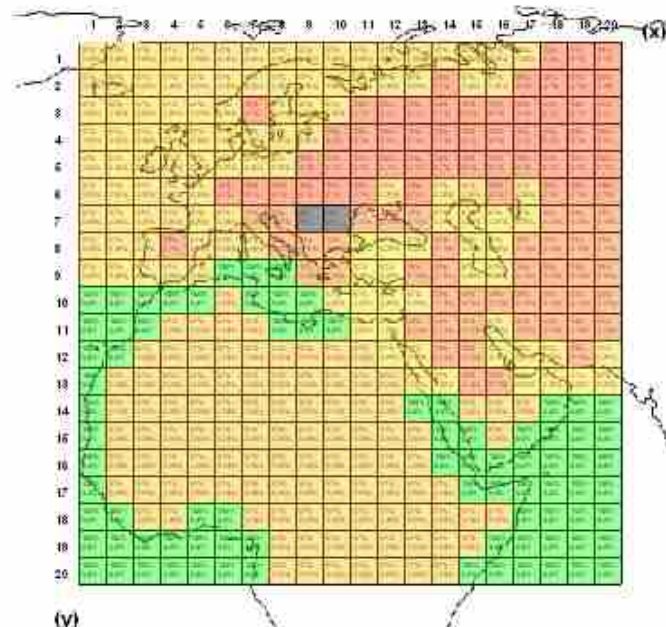
- global
  - Sea/Ocean (0.5175)
  - West of Tyrrhenia/Egypt (0.8075)
  - Elephants (0.625)
  - Strait (0.2625)
  - Not in Asia/Europe (0.5375)
  - Mediterranean/subtropical/tropical flora (0.7)
  - Large mountain range (0.0425)
- regional
  - Large canals (waterside 1 Plethron, ~30m height) (0.5)
  - Evidence for tsunamis in ancient times (0.5)
  - Cultural importance of odd/even numbers (0.0025)
  - Cultural importance of three concentric circles (0.0025)
  - Presence of red/white/black bedrock (0.5)
  - Region of Gaderios (Agadir) (0.5)
  - Matching names (Atlantis thalassa, Kingname Atlas)
  - Smooth plain (0.5)
  - Rectangular plain (long side parallel to the shore) (0.5)
  - Size of the plain (3000x2000 Stadia) (0.5)
  - Island (0.5)
  - Size of island (0.5)
  - Fruits (particular legumes) (0.5)
  - Ore (silver/gold/copper/iron) (0.5)
  - Geological active zone (heavy earthquakes) (0.5)
  - Presence of horses in prehistoric times (0.5)
  - Presence of chariots in prehistoric times (0.5)
  - Located 'beyond' the Pillars of Heracles (0.5)
  - Streams from the mountains (0.5)
  - Year-around water supply (0.5)
  - Canal parallel to the shore (0.5)
  - Fragrant roots (0.5)
  - Sacrifice of bulls (0.5)
  - Dark blue clothes/dye (0.5)
  - Prevailing winds from the North (0.5)
  - North-wind protection (0.5)
  - Trees which afford liquid and solid food and unguent
- local
  - Annular shape of the structure (0.0025)
  - Three concentric circles (0)
  - Distance from the structure to the sea (~50 Stadia) (0.0025)
  - Central hill (akropolis) within the structure (0.0025)
  - Diameter of structure (~27 Stades) (0.0025)
  - Prehistoric settlement within the structure (0.0025)
  - Dimension of settlement is town-sized (0.0025)
  - Water sources (springs/wells) warm and cold on the city wall (0.0025)
  - Reddish sparkling plaster on city wall (0.0025)
  - Presence of cisterns/water reservoirs (0.0025)
  - Architecture (red/white/black stones) (0.0025)
  - Docks cut into red/white/black bedrock (0.0025)
  - Racecourse for horses (0.0025)

# Part 1

## Localizing Archaeomythological Sites - A Formal Approach

Plato

...



**P false positive = 0.26117578125**  
**Expected mean = 1.95, max = 3, min = 0**

**(6,9) = 0.4% support, 3 of 3 indications**  
**(7,9) = 0.4% support, 3 of 3 indications**  
**(8,9) = 0.4% support, 3 of 3 indications**

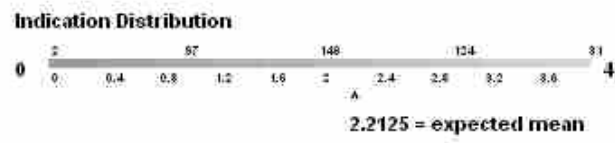
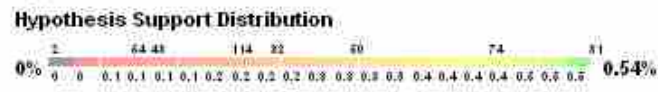
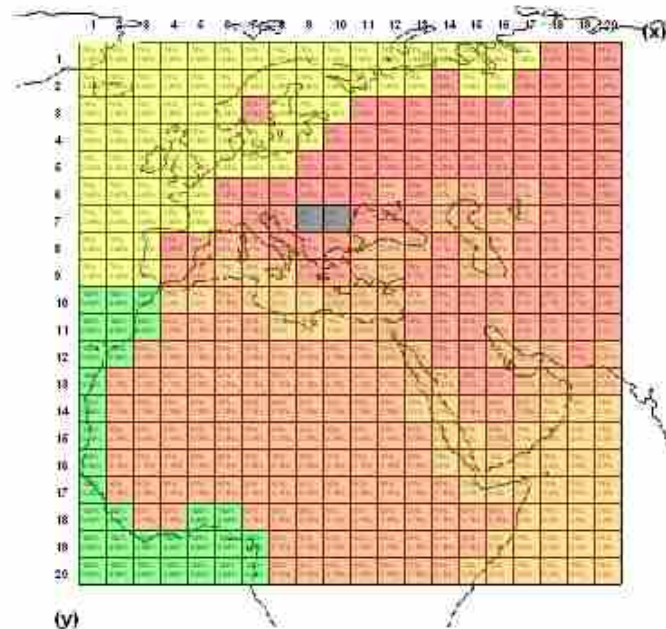
- global
  - Sea/Ocean (0.5175)
  - West of Tyrrhenia/Egypt (0.8075)
  - Elephants (0.625)
  - Strait (0.2625)
  - Not in Asia/Europe (0.5375)
  - Mediterranean/subtropical/tropical flora (0.7)
  - Large mountain range (0.0425)
- regional
  - Large canals (waterside 1 Plethron, ~30m height) (0.5)
  - Evidence for tsunamis in ancient times (0.5)
  - Cultural importance of odd/even numbers (0.0025)
  - Cultural importance of three concentric circles (0.0025)
  - Presence of red/white/black bedrock (0.5)
  - Region of Gaderos (Agadir) (0.5)
  - Matching names (Atlantis thalassa, Kingname Atlas)
  - Smooth plain (0.5)
  - Rectangular plain (long side parallel to the shore) (0.5)
  - Size of the plain (3000x2000 Stadia) (0.5)
  - Island (0.5)
  - Size of island (0.5)
  - Fruits (particular legumes) (0.5)
  - Ore (silver/gold/copper/iron) (0.5)
  - Geological active zone (heavy earthquakes) (0.5)
  - Presence of horses in prehistoric times (0.5)
  - Presence of chariots in prehistoric times (0.5)
  - Located 'beyond' the Pillars of Heracles (0.5)
  - Streams from the mountains (0.5)
  - Year-around water supply (0.5)
  - Canal parallel to the shore (0.5)
  - Fragrant roots (0.5)
  - Sacrifice of bulls (0.5)
  - Dark blue clothes/dye (0.5)
  - Prevailing winds from the North (0.5)
  - North-wind protection (0.5)
  - Trees which afford liquid and solid food and unguent
- local
  - Annular shape of the structure (0.0025)
  - Three concentric circles (0)
  - Distance from the structure to the sea (~50 Stadia) (0)
  - Central hill (akropolis) within the structure (0.0025)
  - Diameter of structure (~27 Stades) (0.0025)
  - Prehistoric settlement within the structure (0.0025)
  - Dimension of settlement is town-sized (0.0025)
  - Water sources (springs/wells) warm and cold on the city wall (0.0025)
  - Reddish sparkling plaster on city wall (0.0025)
  - Presence of cisterns/water reservoirs (0.0025)
  - Architecture (red/white/black stones) (0.0025)
  - Docks cut into red/white/black bedrock (0.0025)
  - Racecourse for horses (0.0025)

# Part 1

## Localizing Archaeomythological Sites - A Formal Approach

Plato

...



**P false positive = 0.068558642578125**  
**Expected mean = 2.2125, max = 4, min = 0**

**(1,10) = 0.54% support, 4 of 4 indications**  
**(2,10) = 0.54% support, 4 of 4 indications**  
**(3,10) = 0.54% support, 4 of 4 indications**

- global
  - Sea/Ocean (0.5175)
  - West of Tyrrhenia/Egypt (0.8075)
  - Elephants (0.625)
  - Strait (0.2625)
  - Not in Asia/Europe (0.5375)
  - Mediterranean/subtropical/tropical flora (0.7)
  - Large mountain range (0.0425)
- regional
  - Large canals (waterside 1 Plethron, ~30m height) (0.5)
  - Evidence for tsunamis in ancient times (0.5)
  - Cultural importance of odd/even numbers (0.0025)
  - Cultural importance of three concentric circles (0.0025)
  - Presence of red/white/black bedrock (0.5)
  - Region of Gaderos (Agadir) (0.5)
  - Matching names (Atlantis thalassa, Kingname Atlas) (0.5)
  - Smooth plain (0.5)
  - Rectangular plain (long side parallel to the shore) (0.5)
  - Size of the plain (3000x2000 Stadia) (0.5)
  - Island (0.5)
  - Size of island (0.5)
  - Fruits (particular legumes) (0.5)
  - Ore (silver/gold/copper/iron) (0.5)
  - Geological active zone (heavy earthquakes) (0.5)
  - Presence of horses in prehistoric times (0.5)
  - Presence of chariots in prehistoric times (0.5)
  - Located 'beyond' the Pillars of Heracles (0.5)
  - Streams from the mountains (0.5)
  - Year-around water supply (0.5)
  - Canal parallel to the shore (0.5)
  - Fragrant roots (0.5)
  - Sacrifice of bulls (0.5)
  - Dark blue clothes/dye (0.5)
  - Prevailing winds from the North (0.5)
  - North-wind protection (0.5)
  - Trees which afford liquid and solid food and unguent
- local
  - Annular shape of the structure (0.0025)
  - Three concentric circles (0)
  - Distance from the structure to the sea (~50 Stadia) (0)
  - Central hill (akropolis) within the structure (0.0025)
  - Diameter of structure (~27 Stades) (0.0025)
  - Prehistoric settlement within the structure (0.0025)
  - Dimension of settlement is town-sized (0.0025)
  - Water sources (springs/wells) warm and cold on the city wall (0.0025)
  - Reddish sparkling plaster on city wall (0.0025)
  - Presence of cisterns/water reservoirs (0.0025)
  - Architecture (red/white/black stones) (0.0025)
  - Docks cut into red/white/black bedrock (0.0025)
  - Racecourse for horses (0.0025)

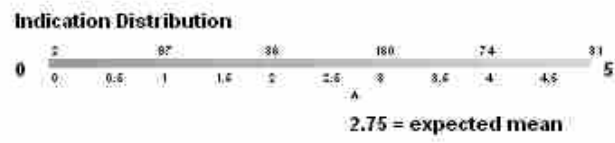
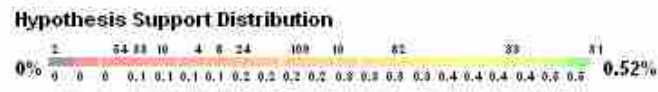
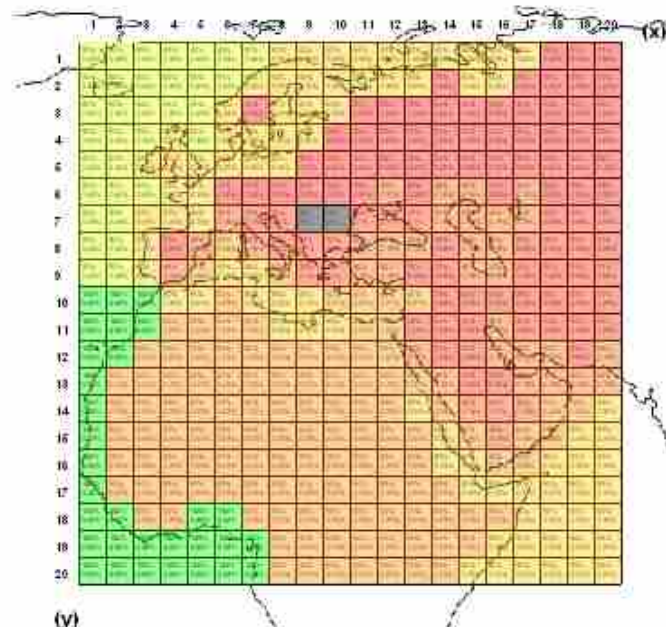


# Part 1

## Localizing Archaeomythological Sites - A Formal Approach

Plato

...



**P false positive = 0.0368502703857422**  
**Expected mean = 2.75, max = 5, min = 0**

**(1,10) = 0.52% support, 5 of 5 indications**  
**(2,10) = 0.52% support, 5 of 5 indications**  
**(3,10) = 0.52% support, 5 of 5 indications**

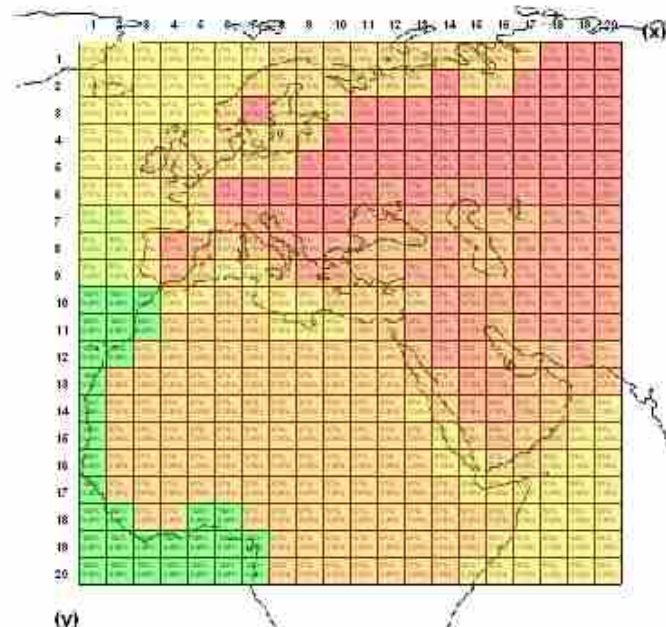
- global
  - Sea/Ocean (0.5175)
  - West of Tyrrhenia/Egypt (0.8075)
  - Elephants (0.625)
  - Strait (0.2625)
  - Not in Asia/Europe (0.5375)
  - Mediterranean/subtropical/tropical flora (0.7)
  - Large mountain range (0.0425)
- regional
  - Large canals (waterside 1 Plethron, ~30m height) (0.5)
  - Evidence for tsunamis in ancient times (0.5)
  - Cultural importance of odd/even numbers (0.0025)
  - Cultural importance of three concentric circles (0.0025)
  - Presence of red/white/black bedrock (0.5)
  - Region of Gadeira (Agadir) (0.5)
  - Matching names (Atlantis thalassa, Kingname Atlas) (0.5)
  - Smooth plain (0.5)
  - Rectangular plain (long side parallel to the shore) (0.5)
  - Size of the plain (3000x2000 Stadia) (0.5)
  - Island (0.5)
  - Size of island (0.5)
  - Fruits (particular legumes) (0.5)
  - Ore (silver/gold/copper/iron) (0.5)
  - Geological active zone (heavy earthquakes) (0.5)
  - Presence of horses in prehistoric times (0.5)
  - Presence of chariots in prehistoric times (0.5)
  - Located 'beyond' the Pillars of Heracles (0.5)
  - Streams from the mountains (0.5)
  - Year-around water supply (0.5)
  - Canal parallel to the shore (0.5)
  - Fragrant roots (0.5)
  - Sacrifice of bulls (0.5)
  - Dark blue clothes/dye (0.5)
  - Prevailing winds from the North (0.5)
  - North-wind protection (0.5)
  - Trees which afford liquid and solid food and unguent
- local
  - Annular shape of the structure (0.005)
  - Three concentric circles (0)
  - Distance from the structure to the sea (~50 Stadia) (0)
  - Central hill (akropolis) within the structure (0.0025)
  - Diameter of structure (~27 Stades) (0.0025)
  - Prehistoric settlement within the structure (0.0025)
  - Dimension of settlement is town-sized (0.0025)
  - Water sources (springs/wells) warm and cold on the city wall (0.0025)
  - Reddish sparkling plaster on city wall (0.0025)
  - Presence of cisterns/water reservoirs (0.0025)
  - Architecture (red/white/black stones) (0.0025)
  - Docks cut into red/white/black bedrock (0.0025)
  - Racecourse for horses (0.0025)

# Part 1

## Localizing Archaeomythological Sites - A Formal Approach

Plato

...



**Hypothesis Support Distribution**



**Indication Distribution**



3.45 = expected mean

**P false positive = 0.0257951892700195**

**Expected mean = 3.45, max = 6, min = 1**

**(1,10) = 0.49% support, 6 of 6 indications**

**(2,10) = 0.49% support, 6 of 6 indications**

**(3,10) = 0.49% support, 6 of 6 indications**

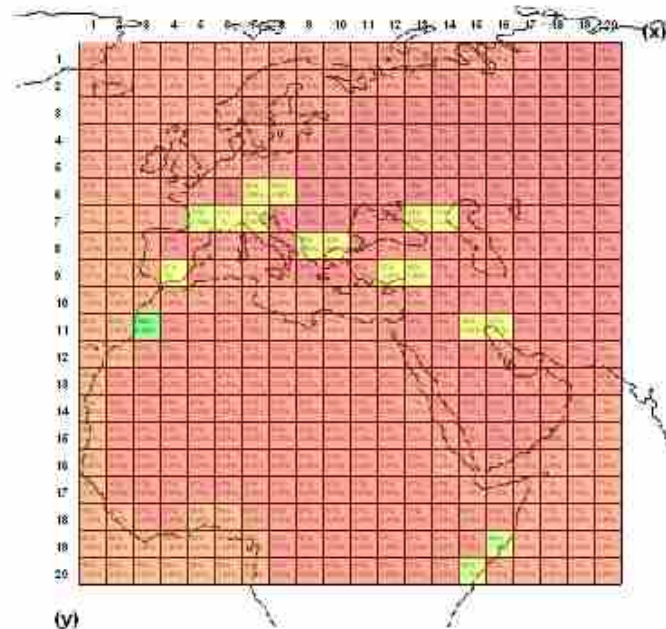
- global
  - Sea/Ocean (0.5175)
  - West of Tyrrhenia/Egypt (0.8075)
  - Elephants (0.625)
  - Strait (0.2625)
  - Not in Asia/Europe (0.5375)
  - Mediterranean/subtropical/tropical flora (0.7)
  - Large mountain range (0.0425)
- regional
  - Large canals (waterside 1 Plethron, ~30m height) (0.5)
  - Evidence for tsunamis in ancient times (0.5)
  - Cultural importance of odd/even numbers (0.0025)
  - Cultural importance of three concentric circles (0.0025)
  - Presence of red/white/black bedrock (0.5)
  - Region of Gadeira (Agadir) (0.5)
  - Matching names (Atlantis thalassa, Kingname Atlas) (0.5)
  - Smooth plain (0.5)
  - Rectangular plain (long side parallel to the shore) (0.5)
  - Size of the plain (3000x2000 Stadia) (0.5)
  - Island (0.5)
  - Size of island (0.5)
  - Fruits (particular legumes) (0.5)
  - Ore (silver/gold/copper/iron) (0.5)
  - Geological active zone (heavy earthquakes) (0.5)
  - Presence of horses in prehistoric times (0.5)
  - Presence of chariots in prehistoric times (0.5)
  - Located 'beyond' the Pillars of Heracles (0.5)
  - Streams from the mountains (0.5)
  - Year-around water supply (0.5)
  - Canal parallel to the shore (0.5)
  - Fragrant roots (0.5)
  - Sacrifice of bulls (0.5)
  - Dark blue clothes/dye (0.5)
  - Prevailing winds from the North (0.5)
  - North-wind protection (0.5)
  - Trees which afford liquid and solid food and unguent
- local
  - Annular shape of the structure (0.005)
  - Three concentric circles (0)
  - Distance from the structure to the sea (~50 Stadia) (0)
  - Central hill (akropolis) within the structure (0.0025)
  - Diameter of structure (~27 Stades) (0.0025)
  - Prehistoric settlement within the structure (0.0025)
  - Dimension of settlement is town-sized (0.0025)
  - Water sources (springs/wells) warm and cold on the city wall (0.0025)
  - Reddish sparkling plaster on city wall (0.0025)
  - Presence of cisterns/water reservoirs (0.0025)
  - Architecture (red/white/black stones) (0.0025)
  - Docks cut into red/white/black bedrock (0.0025)
  - Racecourse for horses (0.0025)

# Part 1

## Localizing Archaeomythological Sites - A Formal Approach

Plato

...



Hypothesis Support Distribution



Indication Distribution



3.4925 = expected mean

P false positive = 0.00109629554397583

Expected mean = 3.4925, max = 7, min = 1

(3,11) = 1.26% support, 7 of 7 indications

(5,7) = 1.14% support, 5 of 7 indications

(16,19) = 1.13% support, 6 of 7 indications

- global
  - Sea/Ocean (0.5175)
  - West of Tyrrhenia/Egypt (0.8075)
  - Elephants (0.625)
  - Strait (0.2625)
  - Not in Asia/Europe (0.5375)
  - Mediterranean/subtropical/tropical flora (0.7)
  - Large mountain range (0.0425)
- regional
  - Large canals (waterside 1 Plethron, ~30m height) (0.5)
  - Evidence for tsunamis in ancient times (0.5)
  - Cultural importance of odd/even numbers (0.0025)
  - Cultural importance of three concentric circles (0.0025)
  - Presence of red/white/black bedrock (0.5)
  - Region of Gaderos (Agadir) (0.5)
  - Matching names (Atlantis thalassa, Kingname Atlas)
  - Smooth plain (0.5)
  - Rectangular plain (long side parallel to the shore) (0.5)
  - Size of the plain (3000x2000 Stadia) (0.5)
  - Island (0.5)
  - Size of island (0.5)
  - Fruits (particular legumes) (0.5)
  - Ore (silver/gold/copper/iron) (0.5)
  - Geological active zone (heavy earthquakes) (0.5)
  - Presence of horses in prehistoric times (0.5)
  - Presence of chariots in prehistoric times (0.5)
  - Located 'beyond' the Pillars of Heracles (0.5)
  - Streams from the mountains (0.5)
  - Year-around water supply (0.5)
  - Canal parallel to the shore (0.5)
  - Fragrant roots (0.5)
  - Sacrifice of bulls (0.5)
  - Dark blue clothes/dye (0.5)
  - Prevailing winds from the North (0.5)
  - North-wind protection (0.5)
  - Trees which afford liquid and solid food and unguent
- total
  - Annular shape of the structure (0.005)
  - Three concentric circles (0)
  - Distance from the structure to the sea (~50 Stadia) (0)
  - Central hill (akropolis) within the structure (0.0025)
  - Diameter of structure (~27 Stades) (0.0025)
  - Prehistoric settlement within the structure (0.0025)
  - Dimension of settlement is town-sized (0.0025)
  - Water sources (springs/wells) warm and cold on the city wall (0.0025)
  - Reddish sparkling plaster on city wall (0.0025)
  - Presence of cisterns/water reservoirs (0.0025)
  - Architecture (red/white/black stones) (0.0025)
  - Docks cut into red/white/black bedrock (0.0025)
  - Racecourse for horses (0.0025)

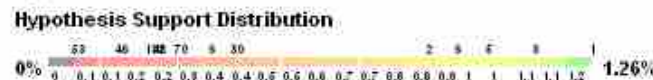
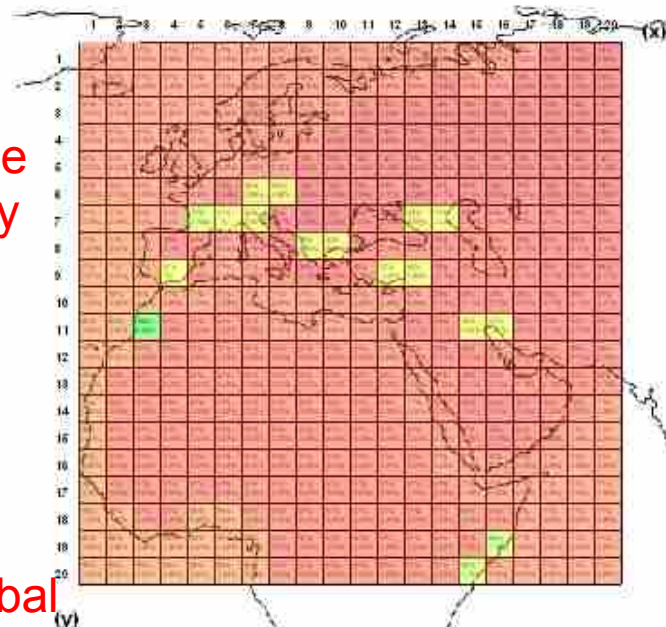
# Part 1

## Localizing Archaeomythological Sites - A Formal Approach

Plato

... the remarkable result is, that only subarea  $a_{3,11}$  fulfills all these criteria.

Note:  
 The probability, that all these global criteria can be found combined by chance within a specific subarea is already approx. 1 in a thousand.



**P false positive = 0.0010962955397583**

(3,11) = 1.26% support, 7 of 7 indications  
 (5,7) = 1.14% support, 5 of 7 indications  
 (16,19) = 1.13% support, 6 of 7 indications

- global
  - Sea/Ocean (0.5175)
  - West of Tyrrhenia/Egypt (0.8075)
  - Elephants (0.625)
  - Strait (0.2625)
  - Not in Asia/Europe (0.5375)
  - Mediterranean/subtropical/tropical flora (0.7)
  - Large mountain range (0.0425)
- regional
  - Large canals (waterside 1 Plethron, ~30m height) (0.5)
  - Evidence for tsunamis in ancient times (0.5)
  - Cultural importance of odd/even numbers (0.0025)
  - Cultural importance of three concentric circles (0.0025)
  - Presence of red/white/black bedrock (0.5)
  - Region of Gaderios (Agadir) (0.5)
  - Matching names (Atlantis thalassa, Kingname Atlas) (0.5)
  - Smooth plain (0.5)
  - Rectangular plain (long side parallel to the shore) (0.5)
  - Size of the plain (3000x2000 Stadia) (0.5)
  - Island (0.5)
  - Size of the island (0.5)
  - Size of the city (0.5)
  - Size of the city wall (0.5)
  - Size of the city wall (0.5)
  - Sacred (0.5)
  - Dark blue clothes/dye (0.5)
  - Prevailing winds from the North (0.5)
  - North-wind protection (0.5)
  - Trees which afford liquid and solid food and unguent (0.5)
- lokal
  - Annular shape of the structure (0.005)
  - Three concentric circles (0)
  - Distance from the structure to the sea (~50 Stadia) (0)
  - Central hill (akropolis) within the structure (0.0025)
  - Diameter of structure (~27 Stades) (0.0025)
  - Prehistoric settlement within the structure (0.0025)
  - Dimension of settlement is town-sized (0.0025)
  - Water sources (springs/wells) warm and cold on the city wall (0.0025)
  - Reddish sparkling plaster on city wall (0.0025)
  - Presence of cisterns/water reservoirs (0.0025)
  - Architecture (red/white/black stones) (0.0025)
  - Docks cut into red/white/black bedrock (0.0025)
  - Racecourse for horses (0.0025)

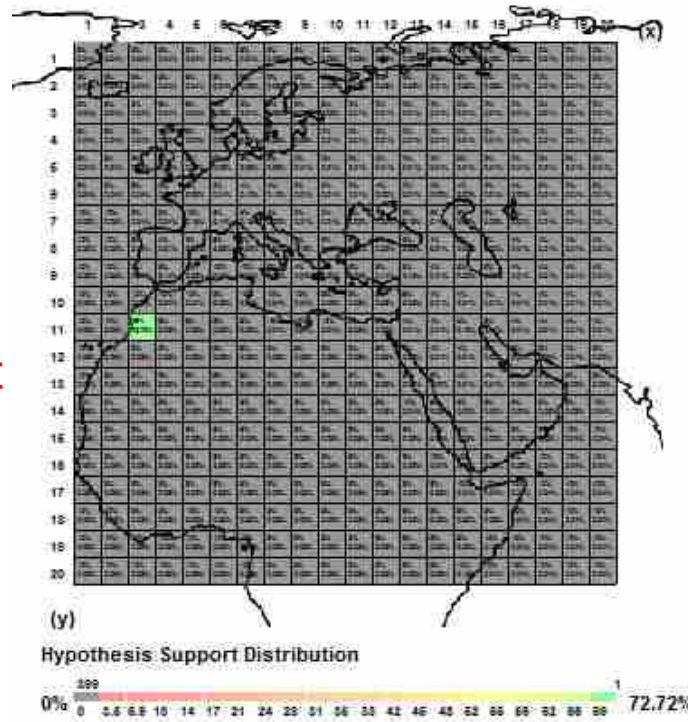
**P false positive = 0.001096**

# Part 1

## Localizing Archaeomythological Sites - A Formal Approach

Plato

In terms of hierarchical constraint satisfaction we proceed and test all regional and local criteria for subarea  $a_{3,11}$  \*



- ✓ global
  - ✓ Sea/Ocean (0.517)
  - ✓ West of Tyrrhenia/Egypt (0.807)
  - ✓ Elephants (0.62)
  - ✓ Strait (0.2625)
  - ✓ Not in Asia/Europe (0.537)
  - ✓ Mediterranean/subtropical/tropical flora (0)
  - ✓ Large mountain range (0.042)
- ✓ regional
  - ✓ Large canals (waterside 1 Plethron ~30m height) (0)
  - ✓ Evidence for tsunamis in ancient times (0)
  - ✓ Cultural importance of odd/even numbers (0)
  - ✓ Cultural importance of three concentric circles (0)
  - ✓ Presence of red/white/black bedrock (0)
  - ✓ Region of Gadeiros (0.2)
  - ✓ Matching names (Atlantis thalassa, Kingname Atlas)
  - ✓ Smooth plain encircled by mountains (0)
  - ✓ Rectangular shape of the plain (long side parallel to island) (0.25)
  - ✓ Size of island (0.2)
  - ✓ Fruits (particular legumes) (0)
  - ✓ Ore (silver, gold, copper, tin) (0)
  - ✓ Geological active zone (heavy earthquakes) (0)
  - ✓ Presence of horses in prehistoric times (0)
  - ✓ Presence of chariots in prehistoric times (0)
  - ✓ Located 'beyond' the Pillars of Heracles (0)
  - ✓ Streams from the mountains (0)
  - ✓ Year-around water supply (0)
  - ✓ Fragrant roots (0.25)
  - ✓ Sacrifice of bulls (0.5)
  - ✓ Dark blue clothes/dye (0)
  - ✓ Prevailing winds from the North (0)
  - ✓ North-wind protection (0.2)
  - ✓ Trees which afford liquid and solid food and unguent
  - ✓ Canal around the plain (0.25)
  - ✓ Canal-system within the plain (0.5)
  - ✓ Size of the plain (3000x2000 Stadia) (0.25)
  - ✓ Canal parallel to the shore (0.25)

\* Note: The probabilities of all regional and local criteria can't be computed as long as we don't have a knowledge-base, that provides us with corresponding information for all subareas. In terms of hierarchical constraint satisfaction we proceed and test subarea  $a_{3,11}$  based on in-situ examinations (several expeditions to South-Morocco in 2007-2011) where all criteria were investigated and most of them found to be true  $t(y, a_{3,11}) = 1$ . But if we want to compute a binominal distribution, we need to make assumptions for the probability of each criteria. Today we know, that South-Morocco has geomorphological features that are very rare. For example we found docks, which were cut into red, white and black bedrock near Cape Ghir. We think this feature, which was indeed described by Plato, is unique in the whole world. (Probability of  $1/400 = 0.0025$  within our search area). But since we don't want to support our South-Morocco test results arbitrarily, we assume that all attributes described by Plato are frequently distributed and therefore have a high probability. Since we know that approx. 50% of all subareas cover land and all criteria are somehow related to land, we assume a 0.5 probability for criteria which we think are more common and a 0.25 probability for criteria which we think are rare. For example we assume a probability of 0.25 instead of 0.0025 for the dock criteria (to be on the safe side). We estimate that most 0.5 criteria have a smaller probability than 0.5 and most 0.25 criteria have a smaller probability than 0.25 in reality.

# Part 1

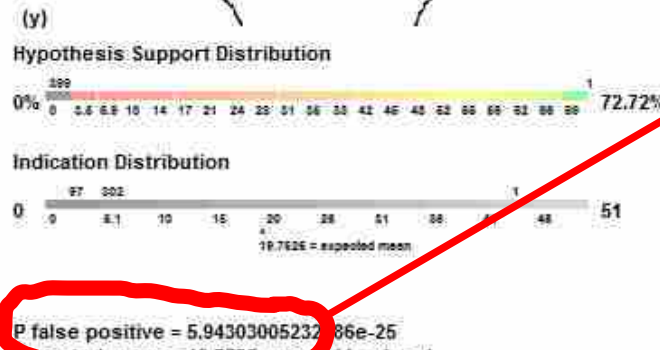
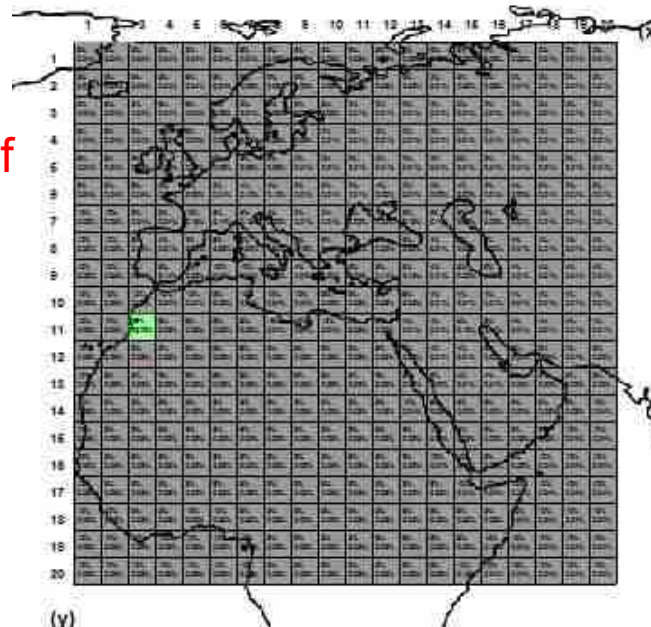
## Localizing Archaeomythological Sites - A Formal Approach

Plato

The probability of finding all 51 criteria within a specific subarea is:

$$5.94 * 10^{-25}$$

Subarea  $a_{3,11}$  fulfills 44 of the 51 criteria.



- ✓ global
  - ✓ Sea/Ocean (0.517)
  - ✓ West of Tyrrhenia/Egypt (0.807)
  - ✓ Elephants (0.62)
  - ✓ Strait (0.2625)
  - ✓ Not in Asia/Europe (0.537)
  - ✓ Mediterranean/subtropical/tropical flora (0)
  - ✓ Large mountain range (0.042)
- ✓ regional
  - ✓ Large canals (waterside 1 Plethron ~30m height) (0)
  - ✓ Evidence for tsunamis in ancient times (0)
  - ✓ Cultural importance of odd/even numbers (0)
  - ✓ Cultural importance of three concentric circles (0)
  - ✓ Presence of red/white/black bedrock (0)
  - ✓ Region of Gadeiros (0.2)
  - ✓ Matching names (Atlantis/thalassa, Kingname Atlas)
  - ✓ Smooth plain encircled by mountains (0)
  - ✓ Rectangular shape of the plain (long side parallel to island) (0.25)
  - ✓ Size of island (0.25)
  - ✓ Fruits (0)
- ✓ local
  - ✓ Annular shape of the structure (0.25)
  - ✓ Distance from the structure to the sea (~50 Stadia) (0)
  - ✓ Central hill (akropolis) within the structure (0.25)
  - ✓ Diameter of structure (~27 Stades) (0.5)
  - ✓ Prehistoric settlement within the structure (0.5)
  - ✓ Dimension of settlement is townsized (0)
  - ✓ Water sources (springs/wells) warm and cold on the island (0)
  - ✓ At least one city wall (0)
  - ✓ Reddish sparkling plaster on city wall (0.5)
  - ✓ Presence of cisterns/water reservoirs (0)
  - ✓ Architecture (red/white/black stones) (0)

**P false positive = 5.94 e-25**

Note: We did a best-case assumption for the null-hypothesis „Atlantis is **not** located in  $a_{3,11}$ “. If we make more realistic estimations for all regional and local probabilities, we get a false positive result for the case that all criteria apply to one subarea that is much less than  $10^{-50}$

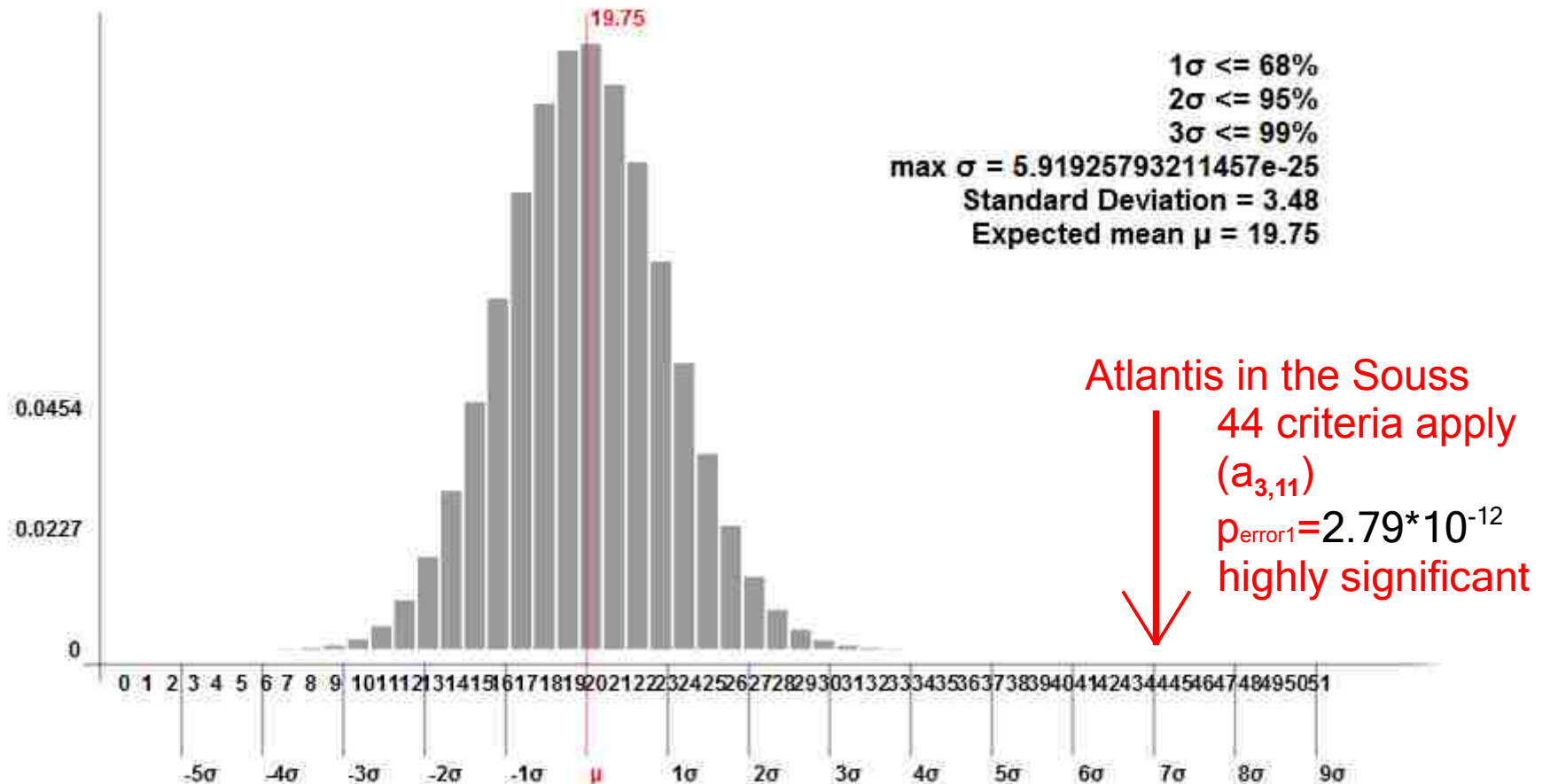
# Part 1

## Localizing Archaeomythological Sites - A Formal Approach

Binomial Distribution 51 Criteria

The probability that 44 of 51 criteria apply to a specific subarea is about:

$$2.79 * 10^{-12}$$



Note: This graphic is computed using the standard equation for binominal distribution based on an averaged probability for all criteria. This is because the computation with the equation introduced in the example section would take several years on my home computer, due to a very high number of permutations. Anyway, the expected mean would be nearly the same, the standard deviation little less and the significance level for  $p(44)$  even higher.

## Diodorus Siculus

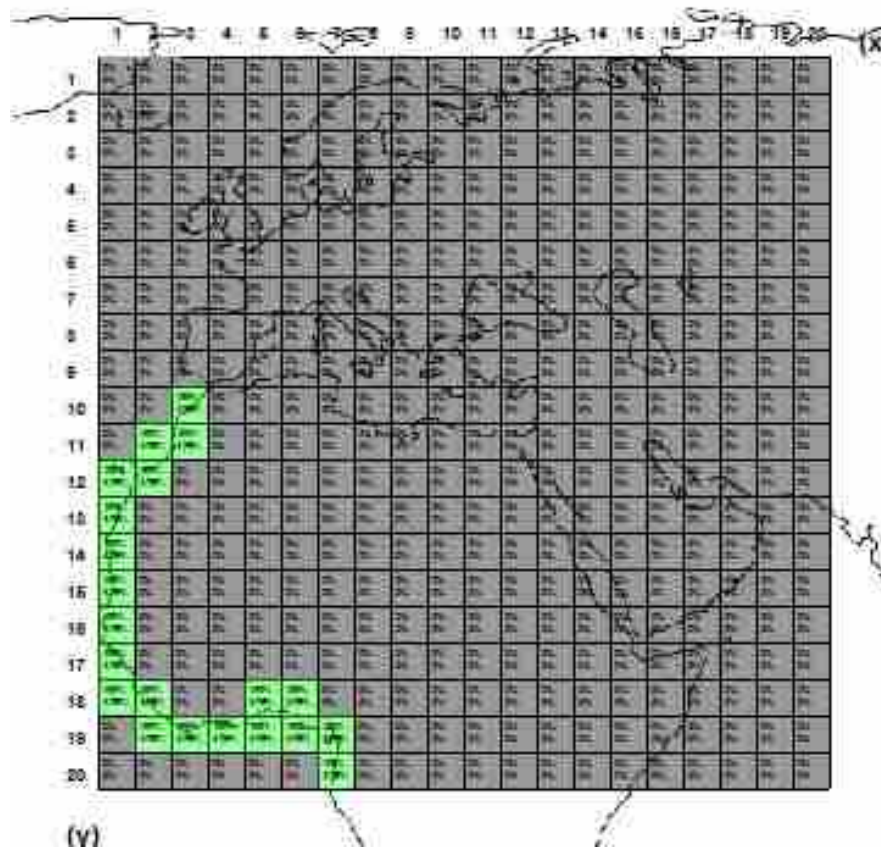
Additionally to Plato's account, we can also analyse other sources like Diodor's account of the settlement area of the *Atlanteans (Atlantoi)* and the *Libyan Amazons*.



# Part 1

## Localizing Archaeomythological Sites - A Formal Approach

Diodorus  
Siculus

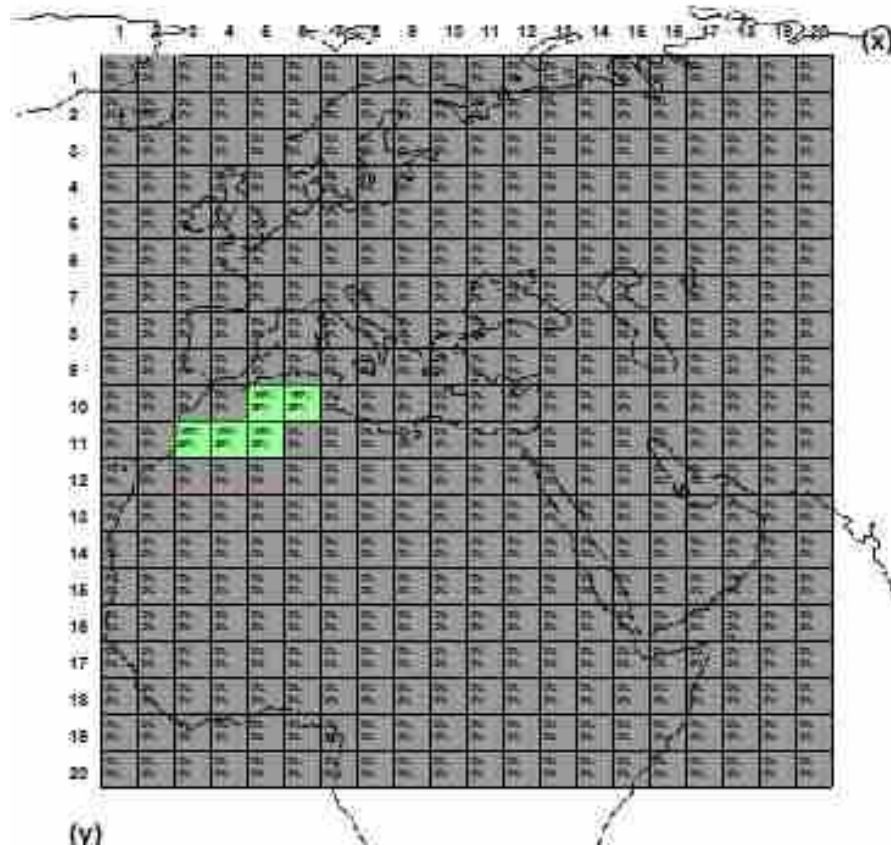


Diodorus said, that the Atlanteans lived on the western parts of Libya (Africa) at the shore ...

# Part 1

## Localizing Archaeomythological Sites - A Formal Approach

Diodorus  
Siculus



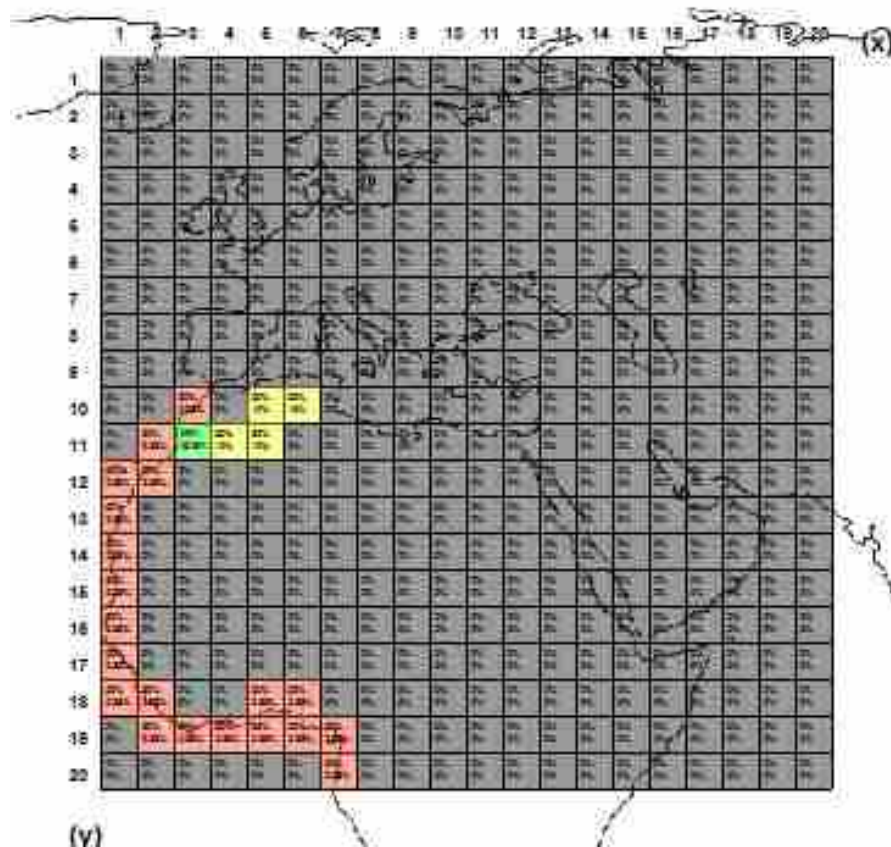
- global
- On the western parts of Libya (0.0525)
- Atlas mountain range (0.0125)
- Close to Ethiopia (0.1525)

... close to the Atlas mountain range ...

# Part 1

## Localizing Archaeomythological Sites - A Formal Approach

Diodorus  
Siculus



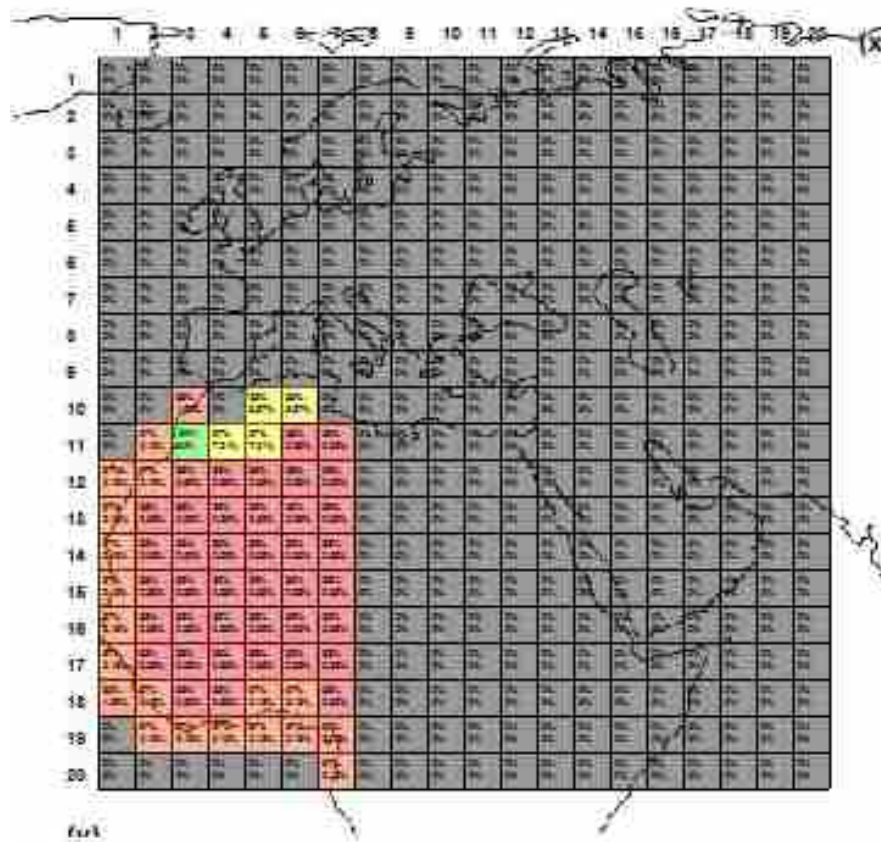
- ✓ global
- ✓ On the western parts of Libya (0.0525)
- ✓ Atlas' mountain range (0.0125)
- Close to Ethiopeia (0.1525)

Just these two criteria point us precisely to the same subarea  $a_{3,11}$  like the result of the analysis of Plato's account.

# Part 1

## Localizing Archaeomythological Sites - A Formal Approach

Diodorus  
Siculus



- ✓ global
- ✓ On the western parts of Libya (0.0525)
- ✓ Atlas mountain range (0.0125)
- ✓ Close to Ethiopia (0.1525)

Additionally, Diodorus' Atlanteans must have lived south of the Atlas mountain range, because their settlement area was also close to ancient Ethiopia. This correlates with Plato's account (south of high mountains and protected from the north wind).

## Maximus of Tyre

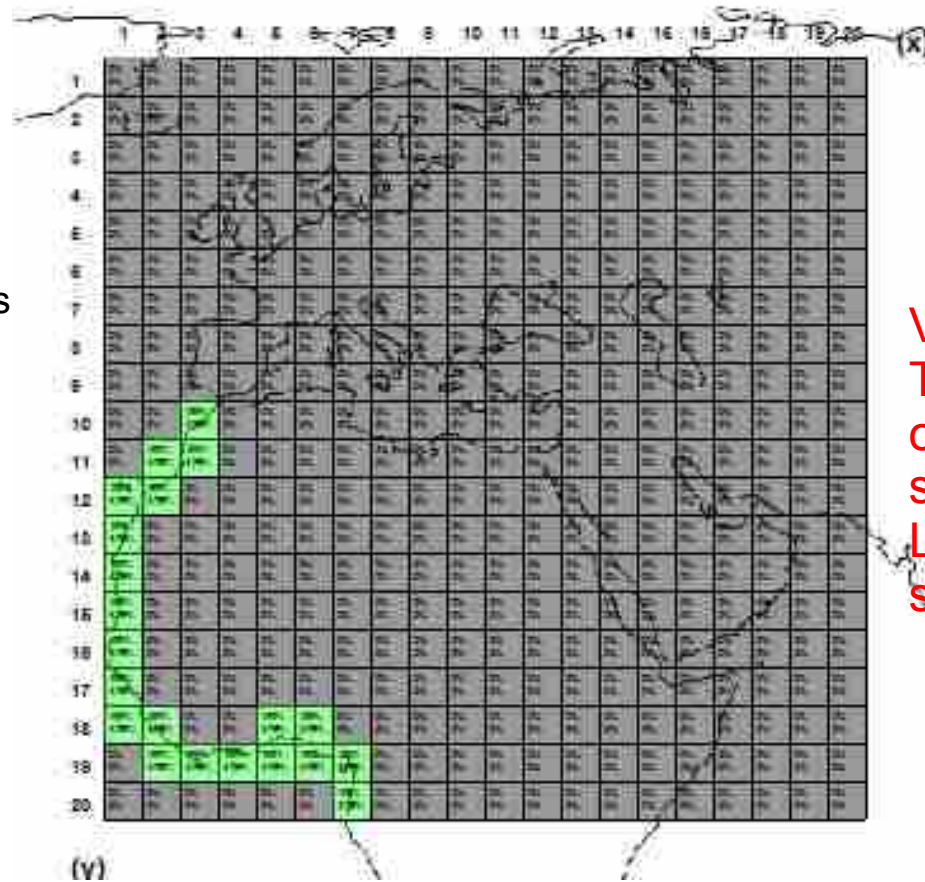
Also Maximus of Tyre's account of the settlement area of the *Hesperian Lybians* points us to subarea  $a_{3,11}$ . He didn't mention the *Atlanteans*, but he gave us other interesting information about this area ...

# Part 1

## Localizing Archaeomythological Sites - A Formal Approach

Maximus of Tyre

The settlement area of the Hesperian Lybians



- ✓ global
- ✓ On the western parts of Libya (0.0525)
- Atlas mountain range (0.0125)
- Where Atlas opens to the sea like theaters

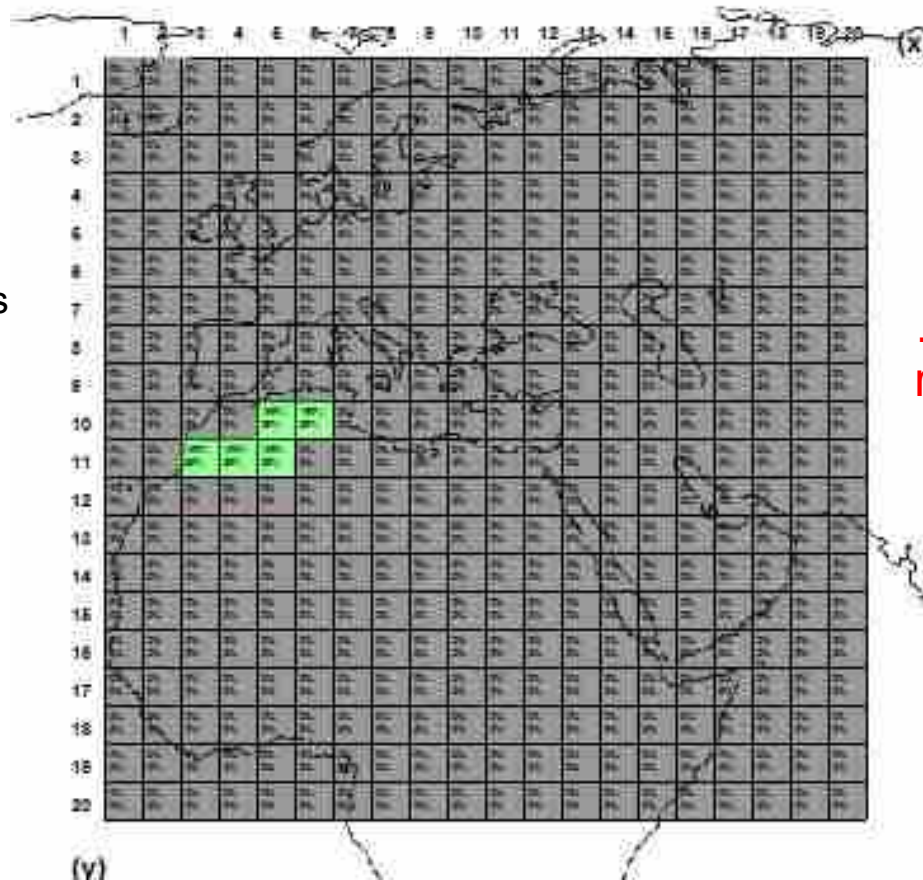
Very similar to Diodor, Maximus of Tyre described the settlement area of the Hesperian Lybians to be situated on the western parts of Libya (Africa) at the Atlantic shore ...

# Part 1

## Localizing Archaeomythological Sites - A Formal Approach

Maximus of Tyre

The settlement area of the Hesperian Lybians



- global
- On the western parts of Libya (0.0525)
- Atlas mountain range (0.0125)
- Where Atlas opens to the sea like theaters

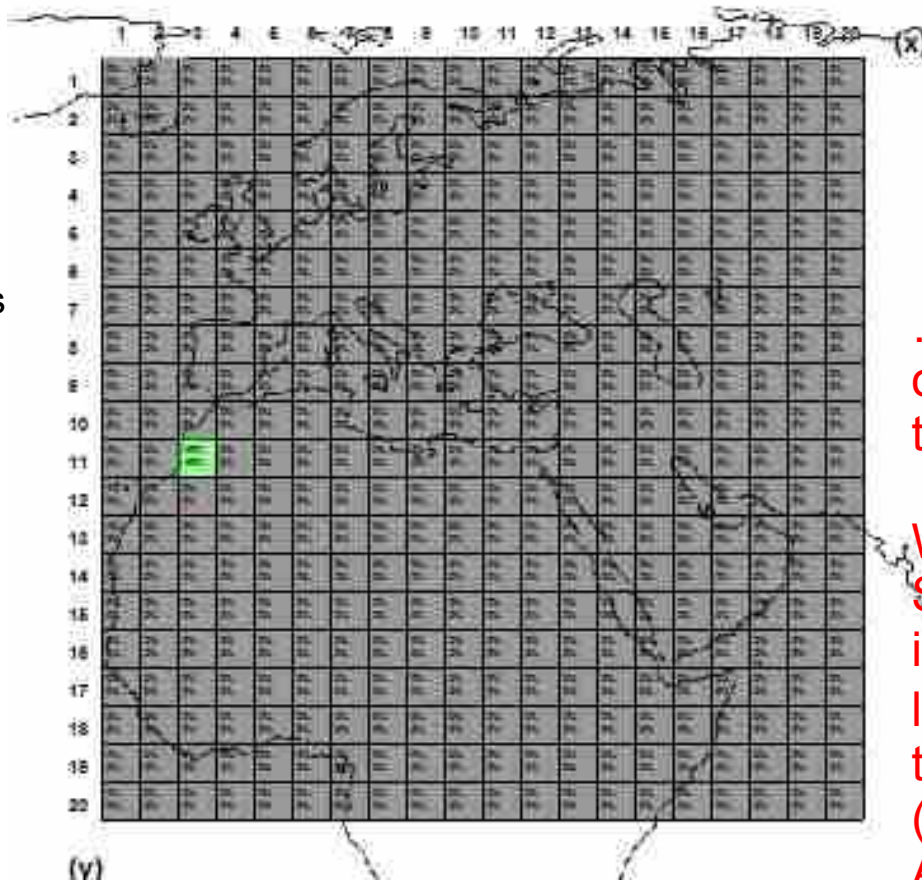
... close to the Atlas mountain range ...

# Part 1

## Localizing Archaeomythological Sites - A Formal Approach

Maximus of Tyre

The settlement area of the Hesperian Lybians



✓ global  
On the western parts of Libya (0.0525)  
Atlas mountain range (0.0125)  
✓ Where Atlas opens to the sea like theaters to the air

... and precisely 'where Atlas opens to the sea like theaters to the air'.

Without doubt, this is the so-called Souss plain (which is situated in  $a_{3,11}$ ), because it is the only location where the Atlas meets the Atlantic and 'opens to the sea' (i.e. split into High Atlas and Anti Atlas, which surround the coastal Souss plain).

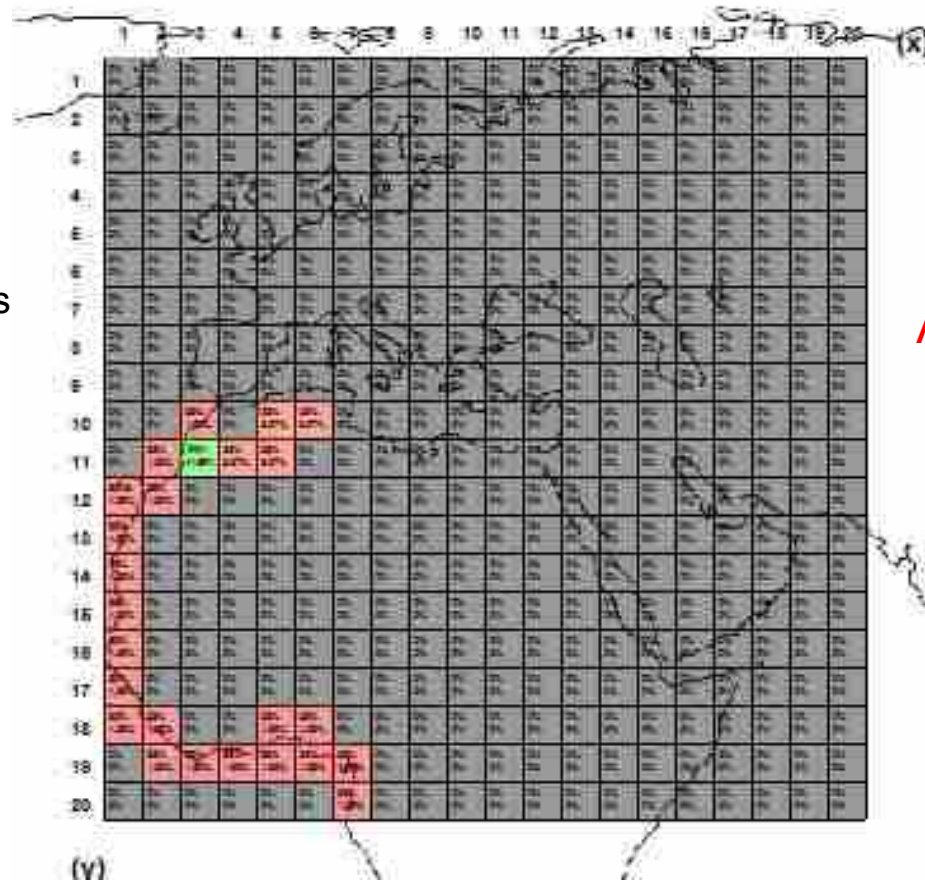


# Part 1

## Localizing Archaeomythological Sites - A Formal Approach

Maximus of Tyre

The settlement area of the Hesperian Lybians



- ✓ global
- ✓ On the western parts of Libya (0.0525)
- ✓ Atlas mountain range (0.0125)
- ✓ Where Atlas opens to the sea like theaters

Again, the result is subarea  $a_{3,11}$

# Part 1

## Localizing Archaeomythological Sites - A Formal Approach

### Maximus of Tyre wrote:

Maximus of  
Tyre

The settlement  
area of the  
Hesperian Lybians

**The Hesperian Lybians inhabit a long narrow strip of land surrounded by the sea. The extremity of this peninsula the ocean envelopes with heavy waves and currents.** To these men Atlas is a temple and a statue. But Atlas is a hollow mountain, of a great altitude, open to the sea like theatres to the air; and in the middle region of the mountain and the sea there is a deep valley, fertile and well planted with trees. In this valley you may see fruits hanging on the trees, which, when surveyed from the summit, appear to be as it were at the bottom of a well; but it is neither possible to descend into it, for it is precipitous, nor lawful. **The prodigy in this place is the ocean, which inundates the shore, and not only pours on the plains but crowns Atlas itself with its waves. You may also see the water rising by itself like a wall,** and neither flowing into the hollow places nor supported by the land; but between the mountain and the water there is much air and a hollow grove. This is the temple and deity, the oath and statue of the Lybians. (Maximus of Tyre, *Disertationes*, viii. 57)

Maximus of Tyre gave us at least two interesting details about this area:

- there once was a peninsula\* (or the region was called peninsula?)
- there is evidence for tsunamis (or even mega tsunamis)

# **Souss vs Santorini**

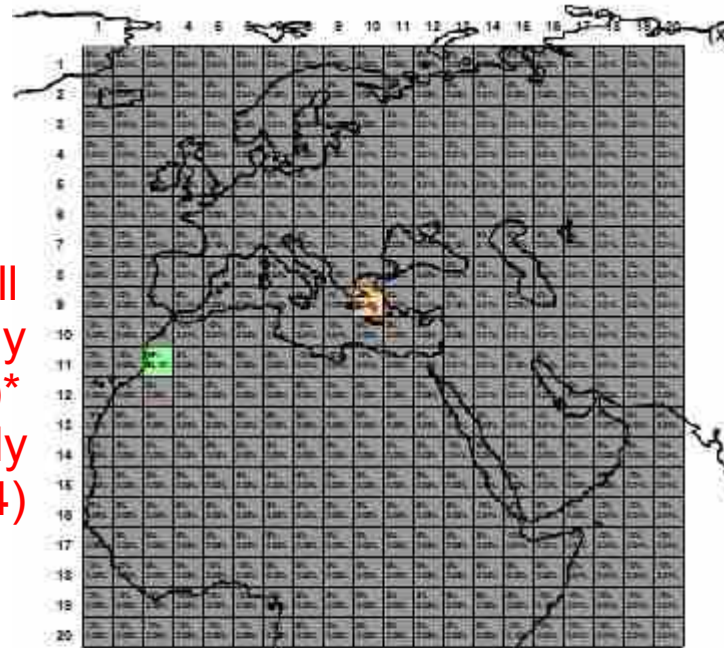
A comparison between the Santorini and the Souss Atlantis hypotheses.

# Part 1

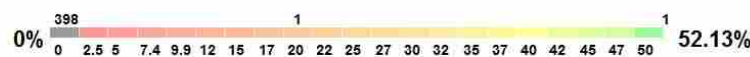
## Localizing Archaeomythological Sites - A Formal Approach

Souss  
vs  
Santorini

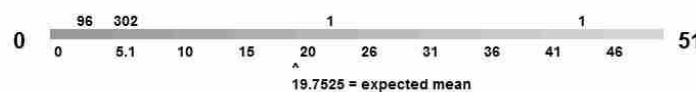
If we compare  
the number of all  
criteria that apply  
to Santorini (23)\*  
with all that apply  
to the Souss (44)  
...



Hypothesis Support Distribution



Indication Distribution



P false positive = 5.94303005232386e-25  
 Expected mean = 19.7525, max = 44, min = 1

(3,11) = 52.13% support, 44 of 51 indications  
 (10,9) = 20.6% support, 23 of 51 indications  
 (5,7) = 0.16% support, 5 of 51 indications

- ✓ global
  - ✓ Sea/Ocean (0.5175)
  - ✓ West of Tyrrhenia/Egypt (0.8075)
  - ✓ Elephants (0.625)
  - ✓ Strait (0.2625)
  - ✓ Not in Asia/Europe (0.5375)
  - ✓ Mediterranean/subtropical/tropical flora (0.7)
  - ✓ Large mountain range (0.0425)
- ✓ regional
  - ✓ Large canals (waterside 1 Plethron ~30m height) (0)
  - ✓ Evidence for tsunamis in ancient times (0.25)
  - ✓ Cultural importance of odd/even numbers (0.25)
  - ✓ Cultural importance of three concentric circles (0.25)
  - ✓ Presence of red/white/black bedrock (0.25)
  - ✓ Region of Gadeliros (0.25)
  - ✓ Matching names (Atlantis thalassa, Kingname Atlas)
  - ✓ Smooth plain encircled by mountains (0.5)
  - ✓ Rectangular shape of the plain (long side parallel to island) (0.25)
  - ✓ Size of island (0.25)
  - ✓ Fruits (particular legumes) (0.5)
  - ✓ Ore (silver/gold/copper/tin) (0.5)
  - ✓ Geological active zone (heavy earthquakes) (0.5)
  - ✓ Presence of horses in prehistoric times (0.5)
  - ✓ Presence of chariots in prehistoric times (0.5)
  - ✓ Located 'beyond' the Pillars of Heracles (0.25)
  - ✓ Streams from the mountains (0.5)
  - ✓ Year-around water supply (0.5)
  - ✓ Fragrant roots (0.25)
  - ✓ Sacrifice of bulls (0.5)
  - ✓ Dark blue clothes/dye (0.5)
  - ✓ Prevailing winds from the North (0.25)
  - ✓ North-wind protection (0.25)
  - ✓ Trees which afford liquid and solid food and unguen
  - ✓ Canal around the plain (0.25)
  - ✓ Canal-system within the plain (0.5)
  - ✓ Size of the plain (3000x2000 Stadia) (0.25)
  - ✓ Canal parallel to the shore (0.25)
- ✓ lokal
  - ✓ Annular shape of the structure (0.25)
  - ✓ Distance from the structure to the sea (~50 Stadia) (0.25)
  - ✓ Central hill (akropolis) within the structure (0.25)
  - ✓ Diameter of structure (~27 Stades) (0.5)
  - ✓ Prehistoric settlement within the structure (0.5)
  - ✓ Dimension of settlement is townsized (0.5)
  - ✓ Water sources (springs/wells) warm and cold on the
  - ✓ At least one city wall (0.5)

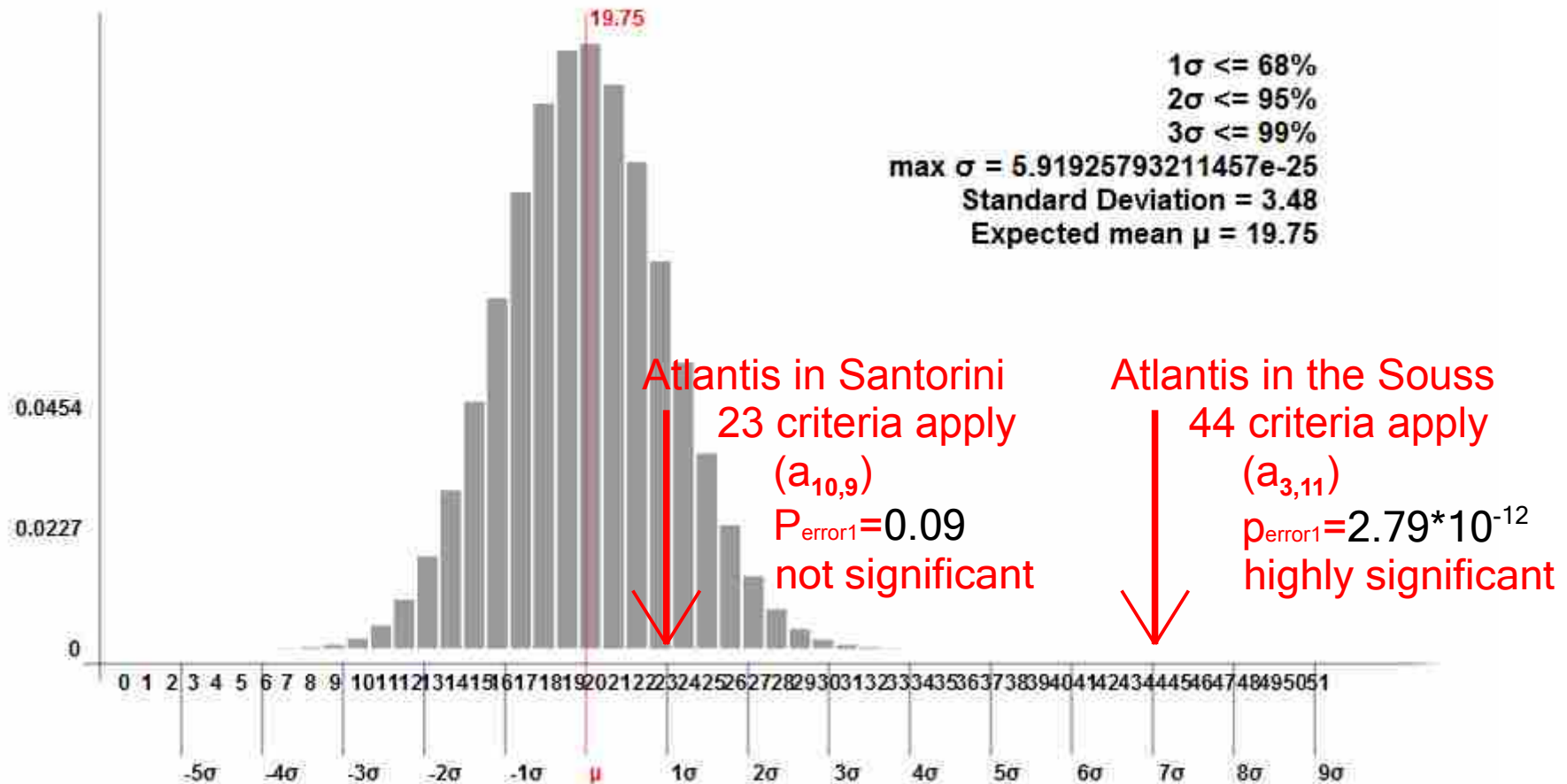
Note: Probably there are less than 23 criteria that apply to Santorini, e.g. we don't know if there is evidence for elephants or horses in prehistoric times or if there once have been docks cut into red, white and black bedrock, etc. But for now we assume that these criteria apply (in dubio pro reo)

# Part 1

## Localizing Archaeomythological Sites - A Formal Approach

Binomial Distribution 51 Criteria

... we notice, that Santorini does not have a significant amount of Atlantis-relevant attributes. Only slightly more than 19.75 (the expected mean) criteria apply.



# Part 2

New Significant Evidences for Plato's *Island of Atlas* in the Souss

## Part 2

Significant New Evidence for the Location of  
Plato's *Island of Atlas*  
in the Souss Plain in today's South Morocco

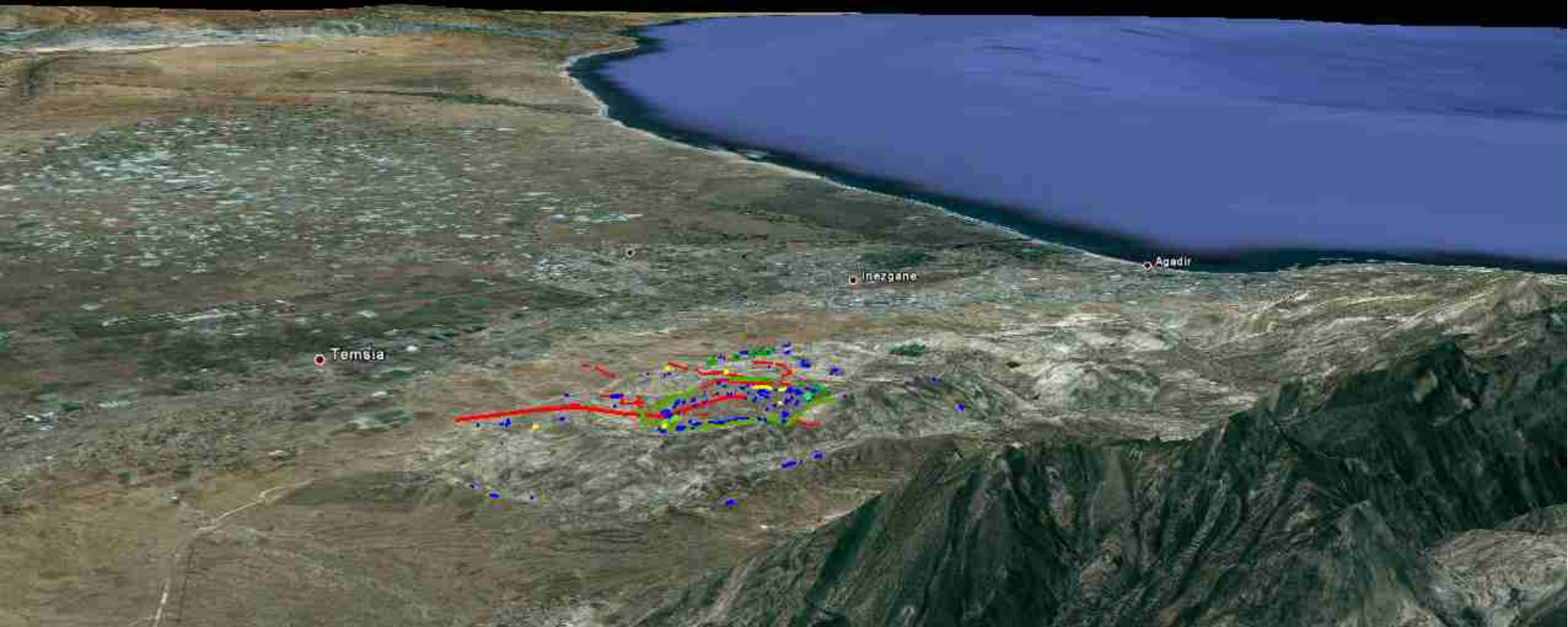
# Part 2

Significant New Evidence for the Location of Plato's *Island of Atlas* in the Souss Plain in today's South Morocco

Satellite overview

Image: Google Earth

The Souss plain seen from North-East to South-West

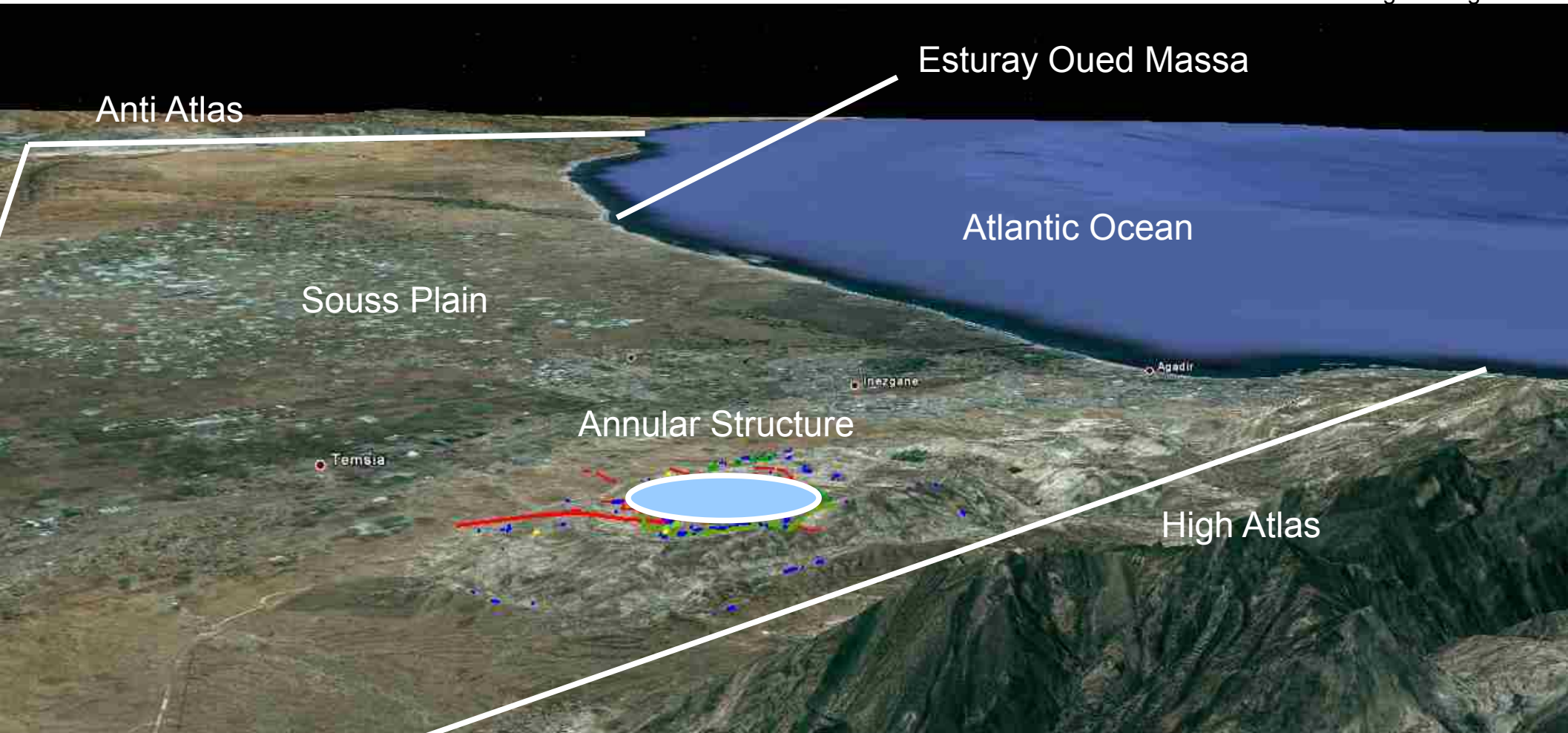


# Part 2

Significant New Evidence for the Location of Plato's *Island of Atlas* in the Souss Plain in today's South Morocco

Satellite overview

Image: Google Earth



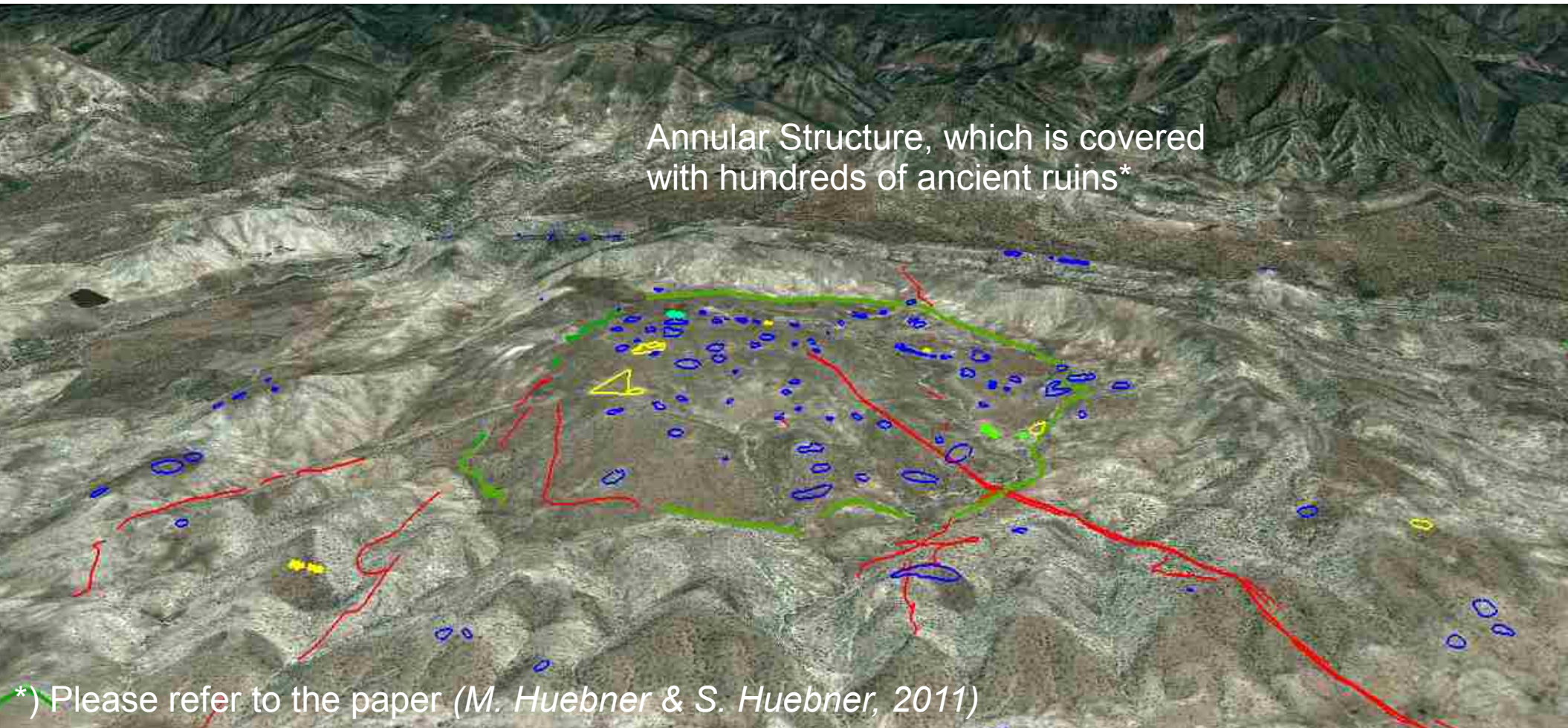


# Part 2

Significant New Evidence for the Location of Plato's *Island of Atlas* in the Souss Plain in today's South Morocco

Satellite overview

Image: Google Earth



Annular Structure, which is covered  
with hundreds of ancient ruins\*

\*) Please refer to the paper (M. Huebner & S. Huebner, 2011)

# Part 2

Significant New Evidence for the Location of Plato's *Island of Atlas* in the Souss Plain in today's South Morocco

Some old maps of the region

# Part 2

Significant New Evidence for the Location of Plato's *Island of Atlas* in the Souss Plain in today's South Morocco

Old Maps



In ancient times,  
Cape Ghir was called  
Hercules Promontory

# Part 2

Significant New Evidence for the Location of Plato's *Island of Atlas* in the Souss Plain in today's South Morocco

Old Maps



The Cerne Island was located south of Cape Ghir. Today, there is no such island.

# Part 2

Significant New Evidence for the Location of Plato's *Island of Atlas* in the Souss Plain in today's South Morocco

Old Maps

Cerne, Hera and/or Autolala Island in front of the Souss.



Cape Ghir

Note: Ptolemy's coordinates are not very exact and most probably all information is based on several sources, therefore some locations could well be drawn twice (or more) on the map with different names. E.g. the Cerne, Hera or Autolala island could be identical, Cape Russaddir could be Cape Heracles/Ghir, Massa could be Massitholos, large harbor (Grosser Hafen) could be Hypodromos, Nuios could be Nias, etc.

Ethiopia

Map: Klaudios Ptolemaios, Handbuch der Geographie, Griechisch – Deutsch Alfred Stückelberger und Gerd Graßhoff Schwabe Verlag Basel, 2006

# Part 2

Significant New Evidence for the Location of Plato's *Island of Atlas* in the Souss Plain in today's South Morocco

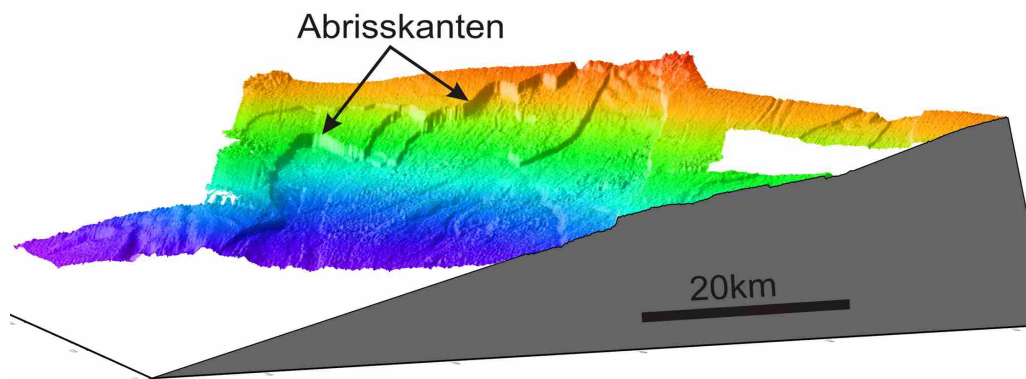
## Indications of Mega Tsunamis in Ancient Times

# Part 2

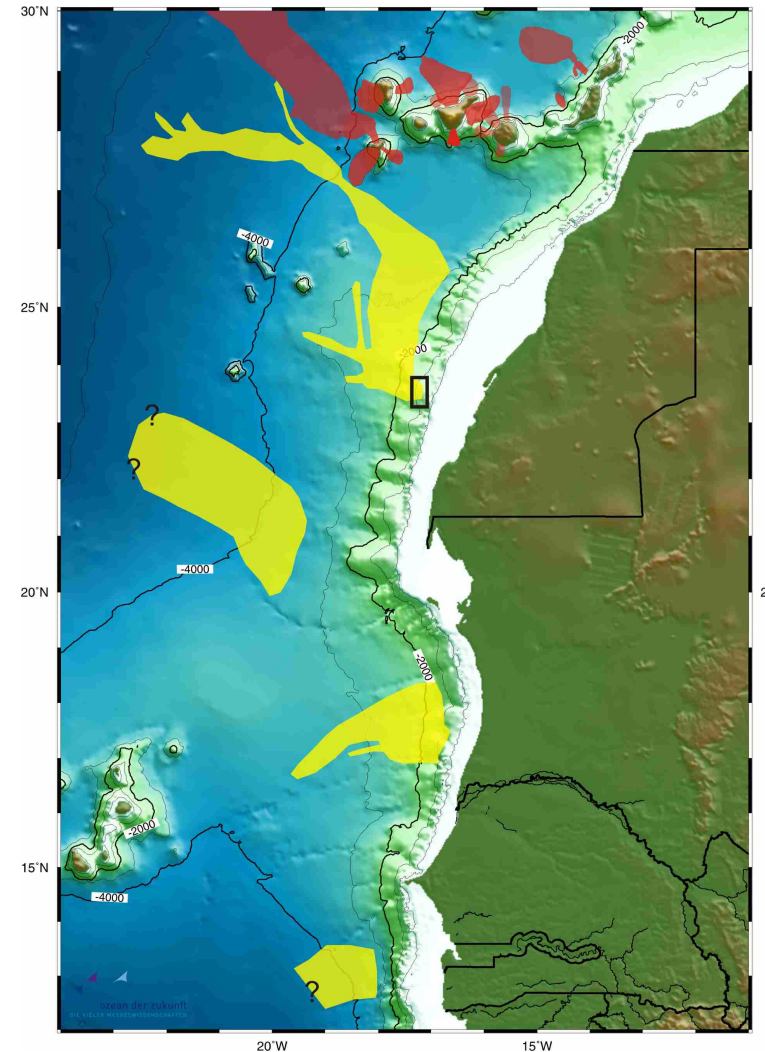
Significant New Evidence for the Location of Plato's *Island of Atlas* in the Souss Plain in today's South Morocco

Evidence for Tsunamis in ancient times  
Aprox: 0-1000 BC

These tremendous undersea landslips, which were discovered in 2010, could have induced mega tsunamis.



ozean der zukunft  
DIE KIELER MEERESWISSENSCHAFTEN



Source: Prof. Dr. Sebastian Krastel, IFM-Geomar,  
Leibniz-Institut für Meereswissenschaften der Universität Kiel, 2010

# Part 2

Significant New Evidence for the Location of Plato's *Island of Atlas* in the Souss Plain in today's South Morocco

## Docks cut into Red-White-Black Bedrock

(Maybe called 'Hypodromos' by Ptolemy)

In addition to the large annular structure covered with hundreds of neolithic ruins, the Souss plain and its environment apply to some other very rare geological features mentioned by Plato.



# Part 2

Significant New Evidence for the Location of Plato's *Island of Atlas* in the Souss Plain in today's South Morocco

Image: Google Earth



## Part 2

Significant New Evidence for the Location of Plato's *Island of Atlas* in the Souss Plain in today's South Morocco

Image: Google Earth



# Part 2

## Significant New Evidence for the Location of Plato's *Island of Atlas* in the Souss Plain in today's South Morocco

Plato wrote:

"And the stone they quarried beneath the central island all round, and from beneath the outer and inner circles, some of it being white, some black and some red; and while quarrying it they constructed two inner docks, hollowed out and roofed over by the native rock." (Crit. 116a, b)

**Caves cut into red, white and black bedrock. It is uncertain if they were human made or of natural origin or both. Today fishermen still use similar structures all along the coast to store their boats.**



# Part 2

Significant New Evidence for the Location of Plato's *Island of Atlas* in the Souss Plain in today's South Morocco



These caves are arranged in a circular bay

# Part 2

Significant New Evidence for the Location of Plato's *Island of Atlas* in the Souss Plain in today's South Morocco

The stone is indeed white (bottom) and red/black conglomerate (roof)

The largest cave is approx 10m wide, 8m high and 32m deep.



# Part 2

Significant New Evidence for the Location of Plato's *Island of Atlas* in the Souss Plain in today's South Morocco



**Detail: red/black stone (roof)**

# Part 2

Significant New Evidence for the Location of Plato's *Island of Atlas* in the Souss Plain in today's South Morocco

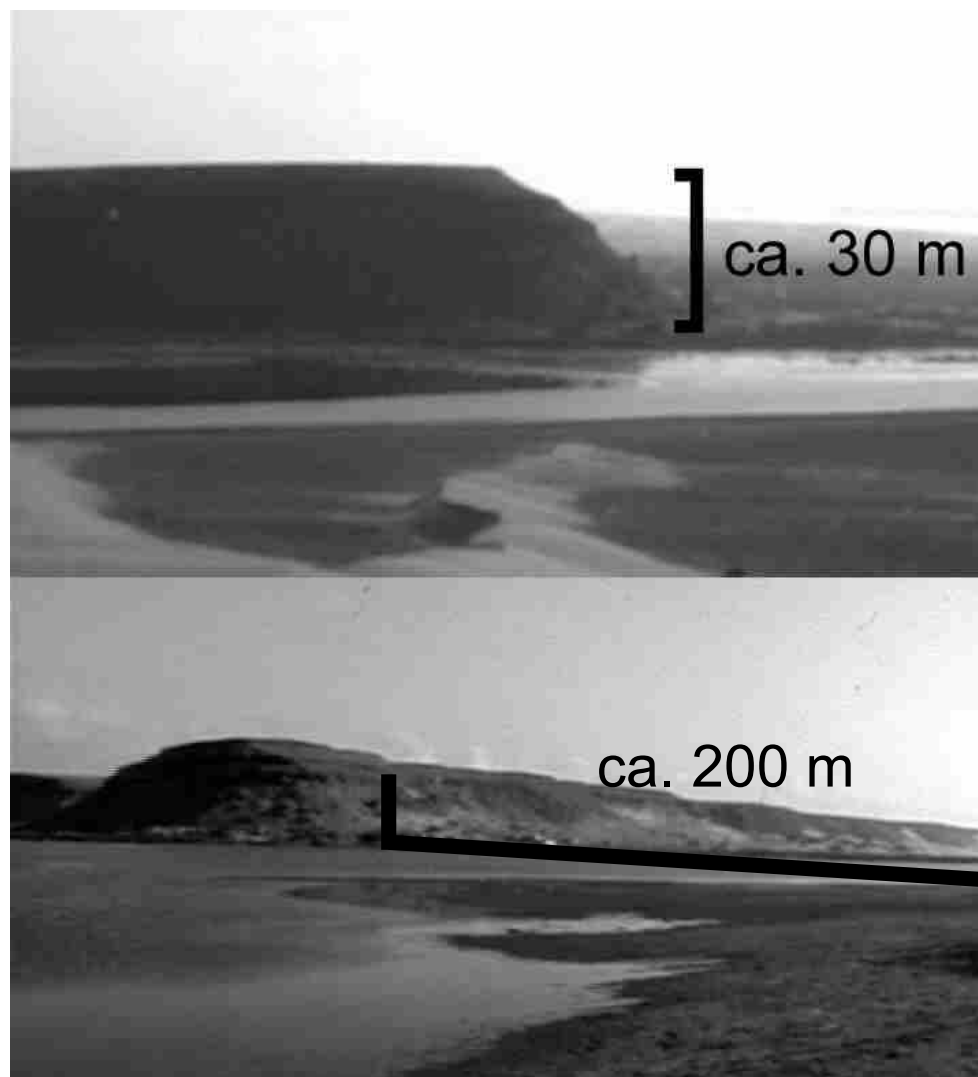
## Canals

1 Stadia (177,6 – 211 meters) wide,  
1 Plethron (29,6 meters) deep

Plato mentioned canals, which where 1 Stadia wide and 1 Plethron deep. This kind of (natural) canal can only be found if there are adequate geological conditions. The Souss plain is an uplifted former sea bed and meets these conditions. Remarkably, today the plain stands about 30 m = 1 Plethron above sea level.

## Part 2

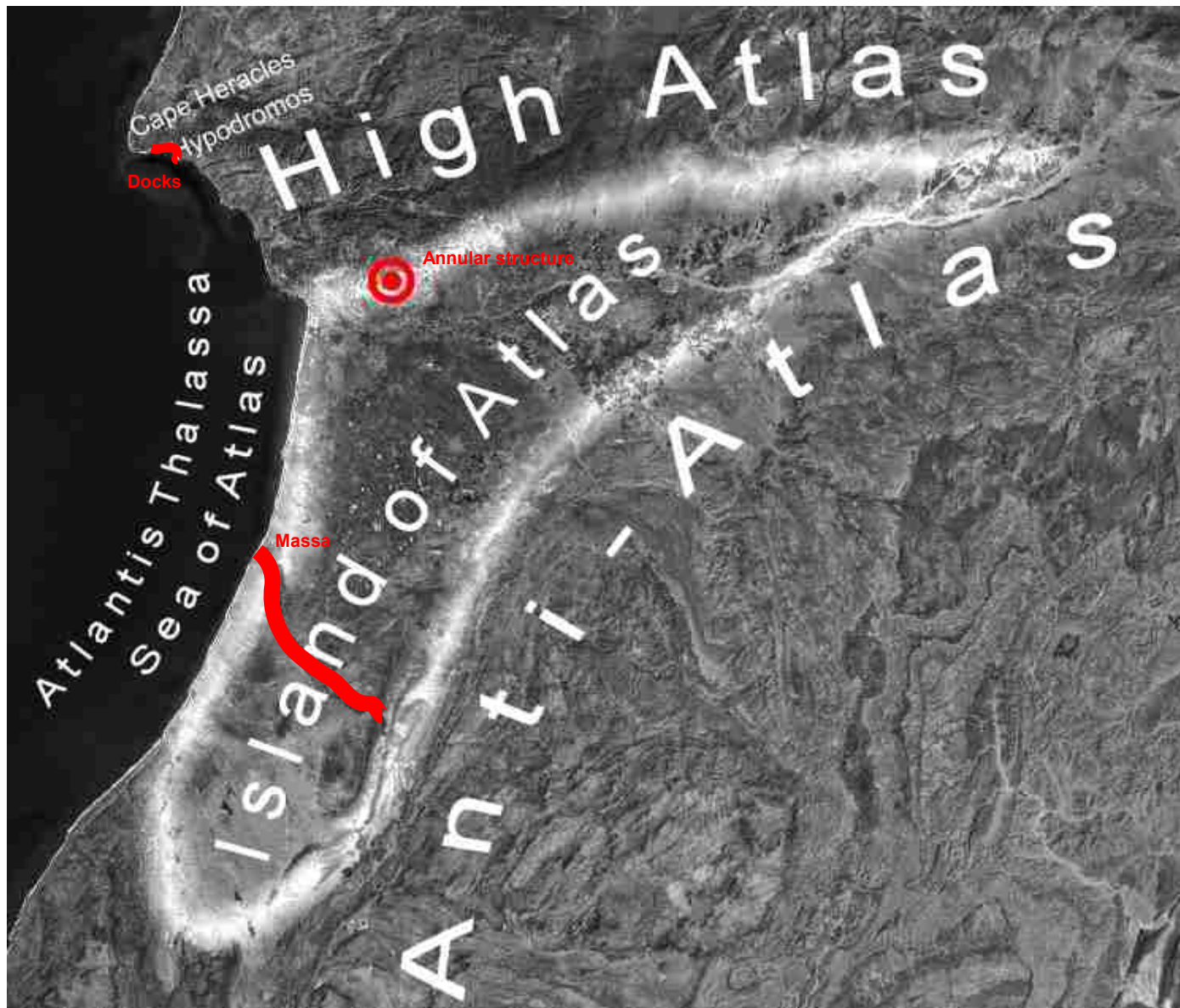
Significant New Evidence for the Location of Plato's *Island of Atlas* in the Souss Plain in today's South Morocco



The estuaries of the Oued Massa and Oued Noun give the impression of 30 m deep and 200 m wide canals and therefore precisely meet Plato's description.



# Conclusion



From all these insights we can say:

Without any\* doubt, Plato's Atlantis account is based on facts.

Also the name *Atlantis Nesos*, the *Island of Atlas* seems to make sense, since the Souss is surrounded by Atlas mountains and sea and therefore is an island within *Atlas*.

\*) Mathematically at most with the doubt of  $2.79 * 10^{-12}$

In other words: The probability that Plato's account is based on historical facts and the Souss is the location he described is at least:

**99,999999999721%**

Thank you very much!

[www.asalas.org](http://www.asalas.org)

References:

Michael. Huebner, 2011,

*Circumstantial Evidence for Plato's Island Atlantis in the Souss-Massa plain in today's South-Morocco,*

Michael. Huebner & Sebastian Huebner, 2011,

*New Evidence for a Large Prehistoric Settlement in a Caldera-Like Geomorphological Structure in Southwest Morocco*

[www.asalas.org/doku.php](http://www.asalas.org/doku.php)