

GPS and

Geocaching



Erasmus+

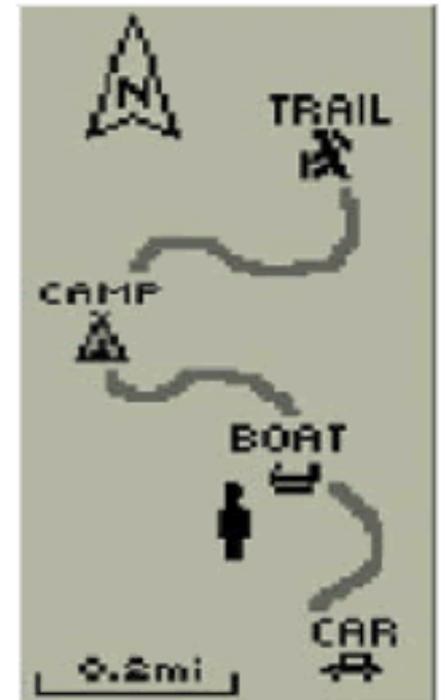


GPS – *Global Positioning System*

It was developed by the US Army's Defense Department. It allows the user, equipped with a receiver, to determine their position anywhere and anytime.

Provides location coordinates (latitude and longitude) that help you locate the user.

The latest models have internal cartography and display the position of the receiver on the map.

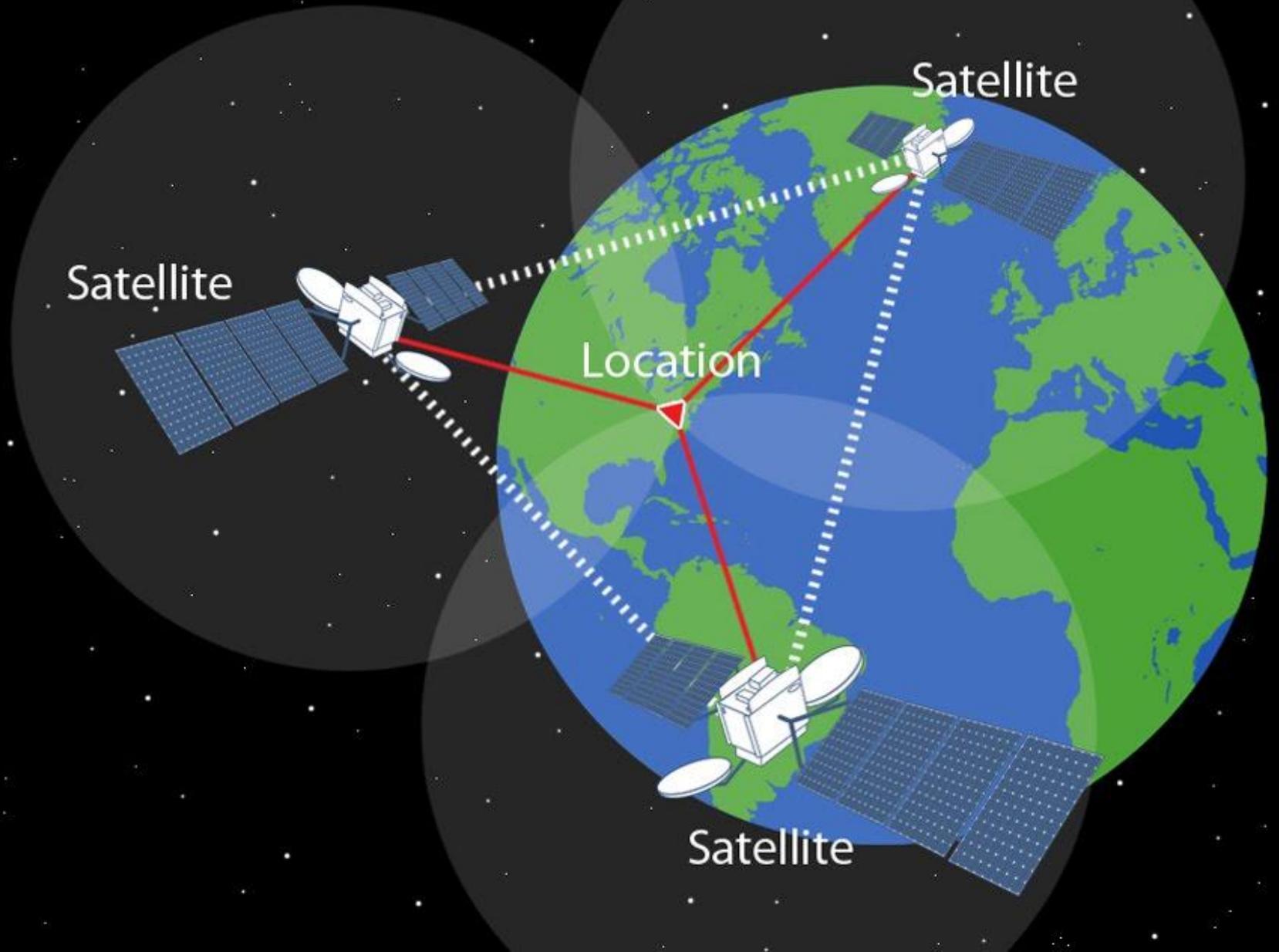


GPS, how does it work?

The device receives the information from the satellites and compares the distance / time measurements between receiver and satellites, thus calculating their position.

Determination of GPS location required Measurement of distances to at least three satellites:

Triangulation





- 1 Each satellite broadcast radio signals with their location, statuses and precise time information.
- 2 GPS radio signal travels at speed of light $\sim 300,000$ km/s.
- 3 GPS device receives radio signals, noting their exact time of arrival and uses these to calculate its distance from each satellite it can see.
- 4 Once a GPS receiver knows its distance from at least 4 satellites, it uses geometry to determine its exact location on Earth in 3D.



Types of GPS devices



Outdoor GPS features:

- Route registration
- Marking of points (geo-referencing)
- Off road trails
- Geocaching
- Development of maps through software





Geocaching, what is it?

It is a high-tech treasure hunt, with GPS receivers, played all over the world.

The basic idea is to find the hidden containers, called geocaches, and then share experiences online.

It is practiced by people of all age groups, with a strong sense of community, interaction and environmental protection.

It can force a significant physical effort depending on the location of the hidden geocache, and may require special equipment (technical climbing equipment, for example).

8 steps to do geocaching:

1. Register for a free Basic Membership.
2. Visit the "[Hide & Seek a Cache](#)" page.
3. Enter your postal code and click "search."
4. Choose any geocache from the list and click on its name.
5. Enter the coordinates of the geocache into your GPS Device.
6. Use your GPS device to assist you in finding the hidden geocache.
7. Sign the logbook and return the geocache to its original location.
8. Share your geocaching stories and photos online.



Very important:

Be discreet

Keeping safe

What are the rules of geocaching?

1. If you take something from the geocache (or "cache"), leave something of equal or greater value.
2. Write about your find in the cache logbook.
3. Log your experience at www.geocaching.com.





What do I need to go geocaching?

The only necessities are a **GPS device** or a **GPS-enabled mobile phone** so that you can navigate to the cache, and a **Geocaching.com Membership**.



Aplicações

Ver mais

- 

Geocaching Intro
Groundspeak Inc.
★★★★★
- 

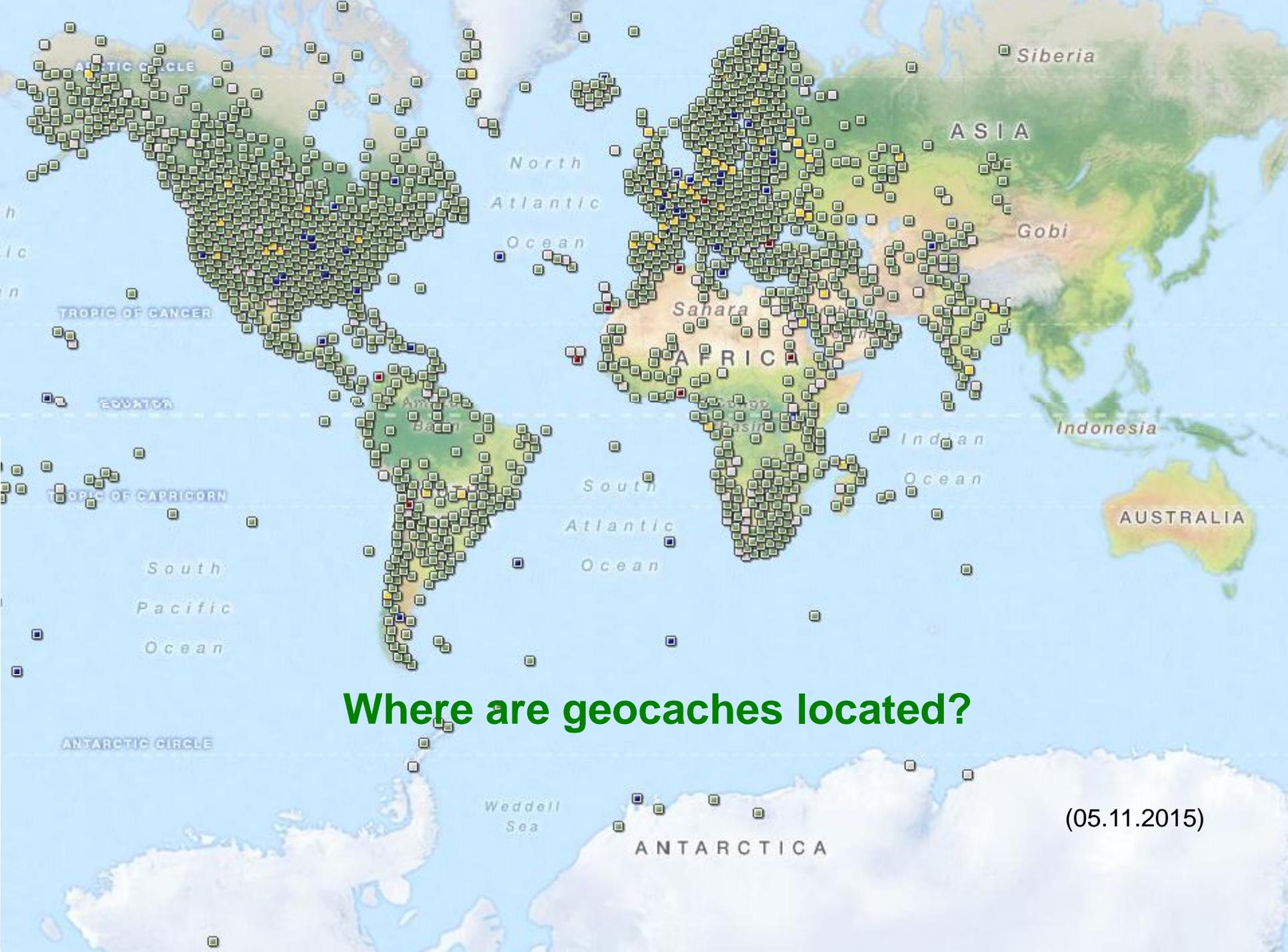
c:geo
c:geo team
★★★★★
- 

Geocaching
Groundspeak Inc.
★★★★★ 9,99 €
- 

GCDroid - Geocaching
GCDroid
★★★★★
- 

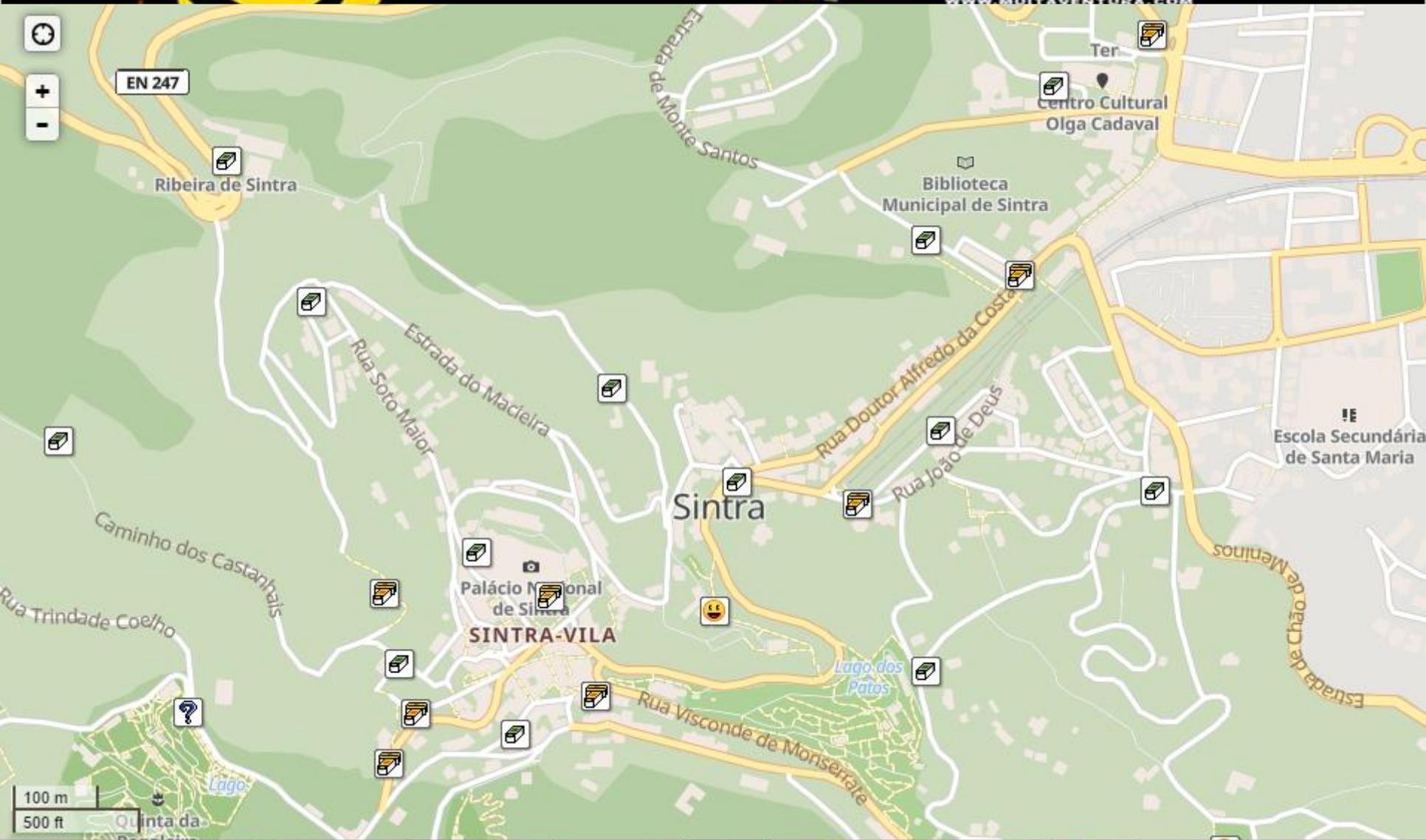
Geocaching Widget
fluer-apps.com
★★★★★
- 

GCC - GeoCache
Eisbehr
★★★★★



Where are geocaches located?

(05.11.2015)





Geocache

MONTE SANTOS 

 [Sintra - Correnteza](#) GC44W9M 

Created by: [P14](#) Date Hidden: 02/May/2013

Difficulty: ★★☆☆☆ Terrain: ★★☆☆☆

Cache Size:  Favorite Points:  8

 [Bookmark It](#)  [Send to GPS](#)  [Log Visit](#)

1 of 1 nearby results · < Prev | Next >

- Geocache Description**
- Initial contents**
- Additional Hints**
- Logged Visits**



Geocache contents

- Logg book
- Geocacher ID
- Pencil
- Objects
- Geocoins
- Travel Bugs
- Promotionals

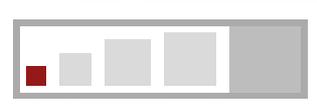


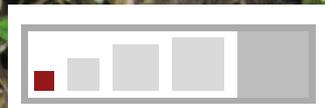


What does a geocache look like?

- Micro** - Less than 100ml
- Nano** - less than 10ml
- Small** - 100ml to 1L
- Regular** - 1L to 20L
- Large** - 20L or larger
- Other**

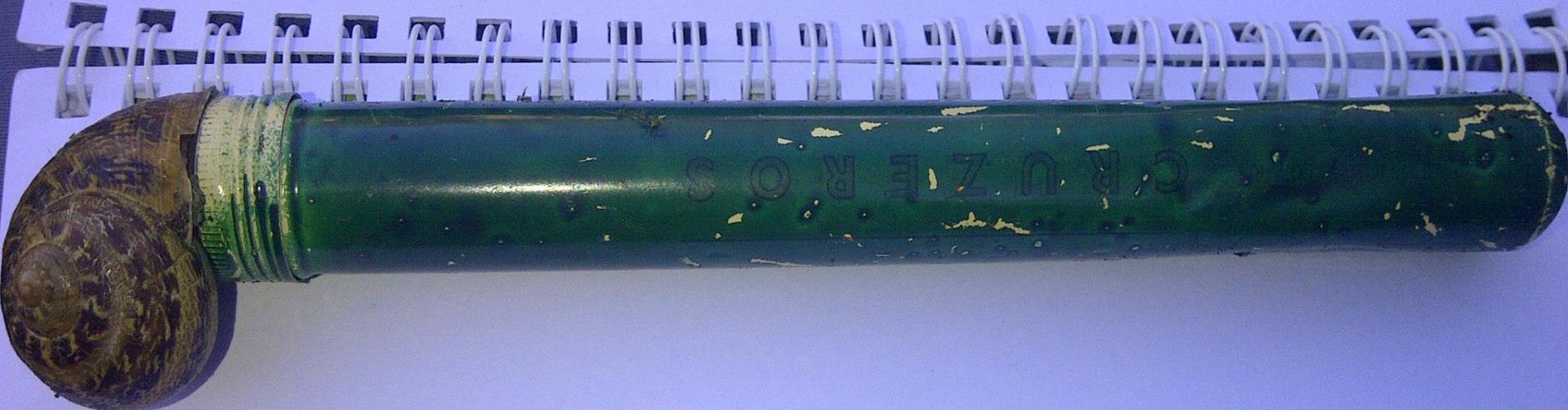
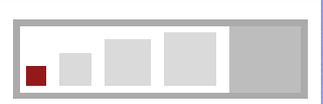




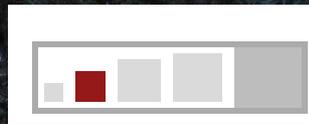




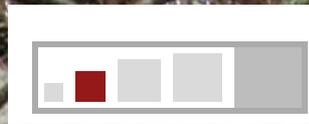


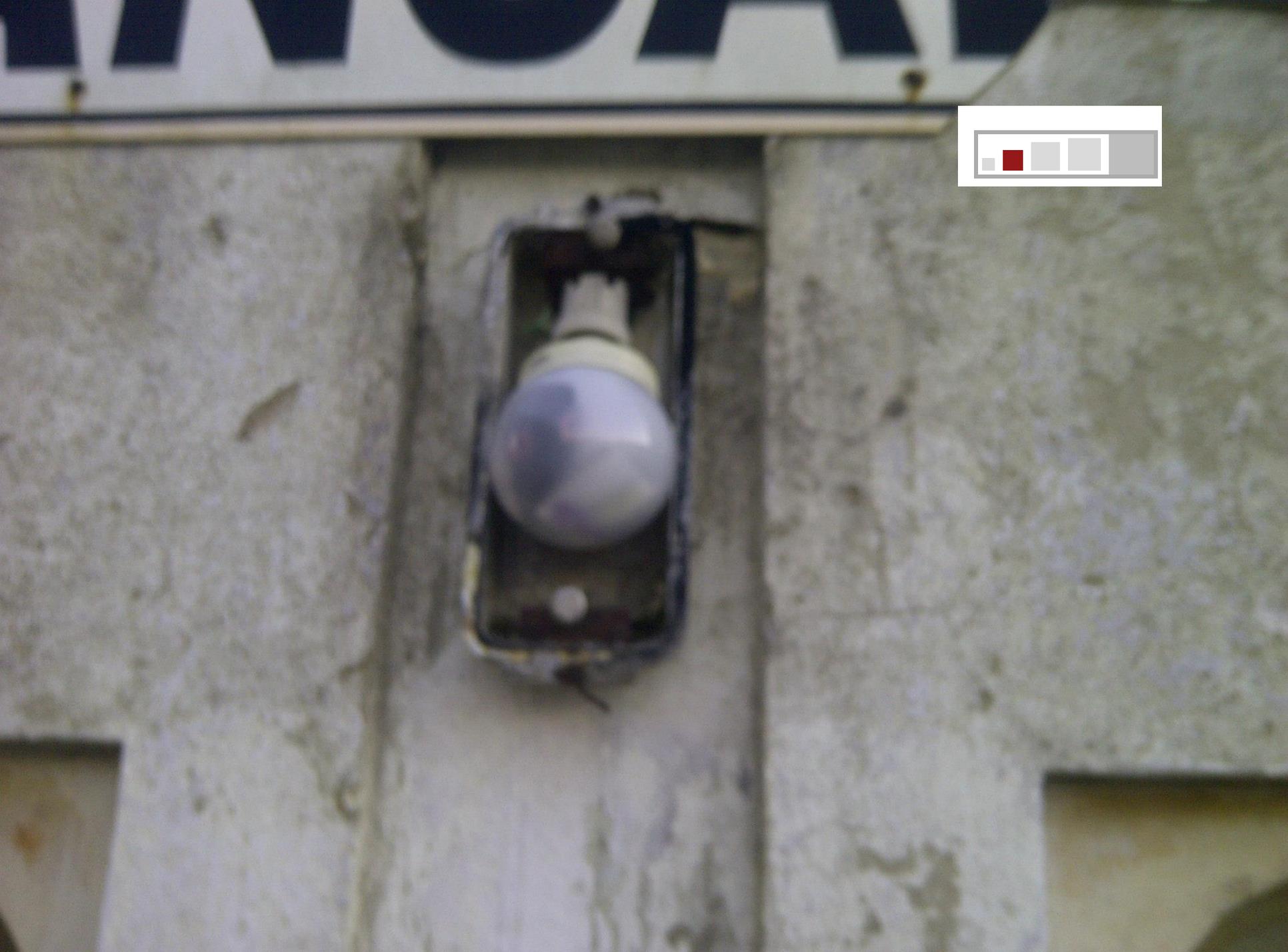


CRUZEROS













Dane County Parks
Go
ENJOY THE OUTDOORS

CACHE

Yogas

Instructions
[Diagram of a cache box]



Multi-cache



Tradicional Cache



**Mistério ou Enigma
Caches**



Virtual Cache



Evento Cache



Cache Reversa



Mega-Evento Cache



EarthCache



Webcam Cache



Árvores de Interesse Público [Lx]

A cache by [almeidara](#)

Hidden: 6/29/2007

Size:  (Regular)

Difficulty: 

Terrain:  (1 is easiest, 5 is hardest)

 Greyed out links are only available to [Premium Members](#). 

N 38° 42.978 W 009° 08.906 [\[Other Conversions\]](#)

UTM: 29S E 487095 N 4285305

In Lisboa, Portugal

Print:

 [Simple \(No Logs\)](#) |  [Driving Directions](#)  |  PDF: [\[No Logs\]](#) [\[5 Logs\]](#) [\[10 Logs\]](#)

Download: [\[Read About Waypoint Downloads\]](#)

[LOC Waypoint File](#)

[GPX eXchange File](#)

[Send to GPS](#)

[Send to Phone](#)



- Percorrer **15 jardins** e ruas com árvores classificadas como interesse público na cidade de Lisboa.
- Colectar informações que permite achar as coordenadas finais da cache num jardim de Lisboa.
- As coordenadas finais envolvem alguns cálculos simples.
- Tirem fotos e publiquem, revelem esconderijos.
- Existem **42 árvores** classificadas na cidade, foram escolhidas "apenas" **15**.
- Deslumbrem-se com o seu porte, gozem as suas sombras. Façam esta cache de modo descontraído. Mais informações na [Câmara Municipal de Lisboa](#).



How to Hide a Geocache

- Step 1 - Research a Cache Location**
- Step 2 - Preparing Your Cache**
- Step 3 - Placing Your Cache**
- Step 4 - Submitting Your Cache**
- Step 5 - Maintaining Your cache**





Today's tasks:



Integrated
GPS antenna

UP
Button

PAGE
Button

DOWN
Button

ENTER
Button

On/Off
Button
(POWER)



LCD display with background illumination









There are approximately 3 million active geocachers worldwide:

- more than 830 000 in the U.S.
- more than 375 000 in Germany
- more than 160 000 in the United Kingdom

More than 2.8 million geocaches are waiting to be found in over 180 countries.



WELCOME
geocacher

noun

A person who uses
multi-billion dollar satellites
to find Tupperware
in the forest.

Thank you