

The European Commission's science and knowledge service

Joint Research Centre



Principles of the partnership, main achievements, and objectives of the meeting

Martino Pesaresi

GEO Human Planet Forum, Enschede, Netherland, 13 September 2017

Back to the ground: about Human footprint, new evidences and revision of theories

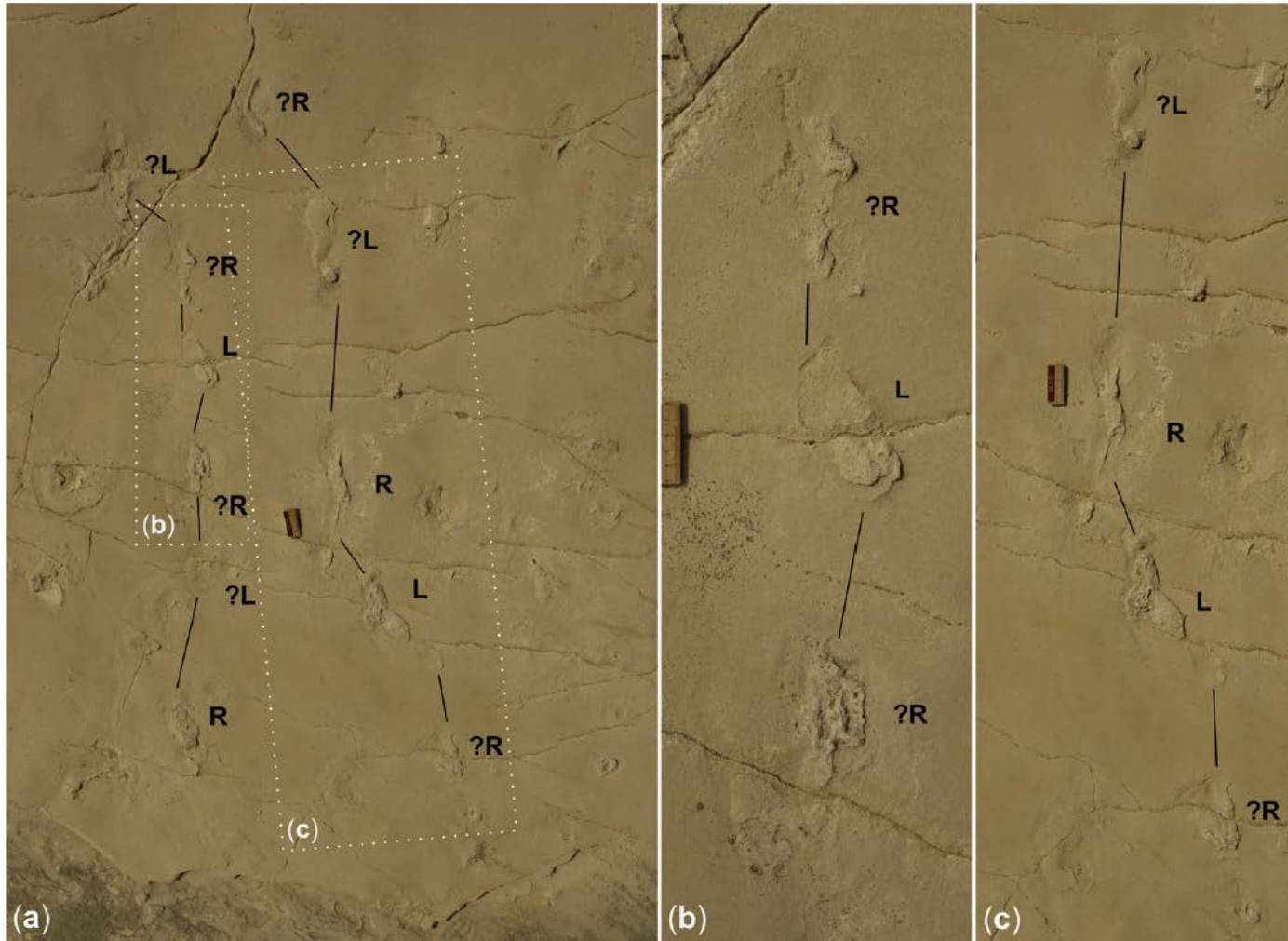


Fig. 7. Trackways. (a) Two trackways from surface B2, details shown in (b) and (c). R and L indicate right and left footprints.

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Possible hominin footprints from the late Miocene (c. 5.7 Ma) of Crete?

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^e Hellenic Ministry of Culture and Sports, Ephorate of Palaeoanthropology-Speleology, Ardittou 34B, GR-11636 Athens, Greece
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A long journey



- 2008 – concept setting, first meeting at the JRC on Global Human Settlement
- 2010 – first large-scale trial with ASAR data 75m
- 2012 – generalized prototype VHR (0.5-10m) data
- 2014 – the manifesto of the GHS partnership
- 2015 – first HR (15m-75m) data_{open&free}
- 2016 – new GEO Human Planet initiative
- 2017 – first Human Planet Forum
- 2018 - second public data_{open&free} release
- 2019 – UN statistical commission

- October 2014
- The manifesto



<https://www.earthobservations.org/>

Urgency of knowledge for action

large knowledge gaps

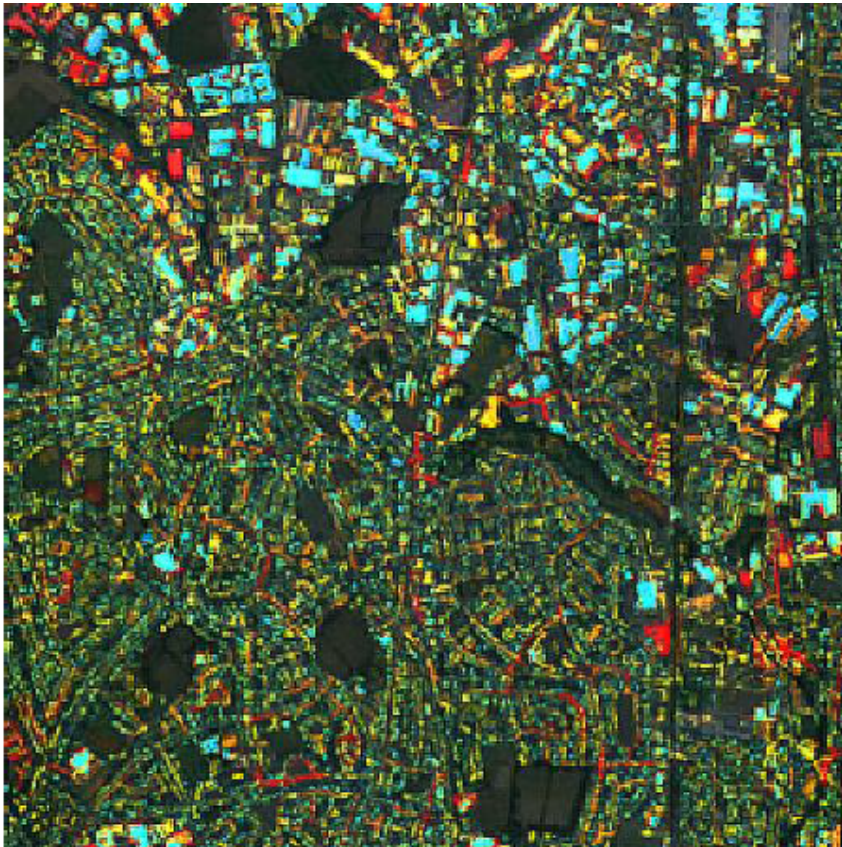


Statement for a Global Human Settlement Partnership

People have endeavoured to change the earth since their earliest days. Now a profound global transformation is underway as our population moves from a primarily rural and agricultural society to one that is becoming more urban with every day. We increasingly live in towns, cities, even megacities. Urbanisation is happening at a rapid pace.

*In the last 50 years, an additional 4 billion people have settled on this planet – the population increases by more than 150 extra people every minute: but exactly where these new people live remains largely unknown. **We may believe we know the single branch of the tree on which we sit, but we ignore the tree and the forest within which it grows.** The density, the heterogeneity, the dynamics of human settlements and their interactions with the environment are fundamental pieces of information we need to have at hand to help us keep in balance the use and regenerative capacity of our planet's resources.*

inclusive concept, technology used for enabling public good

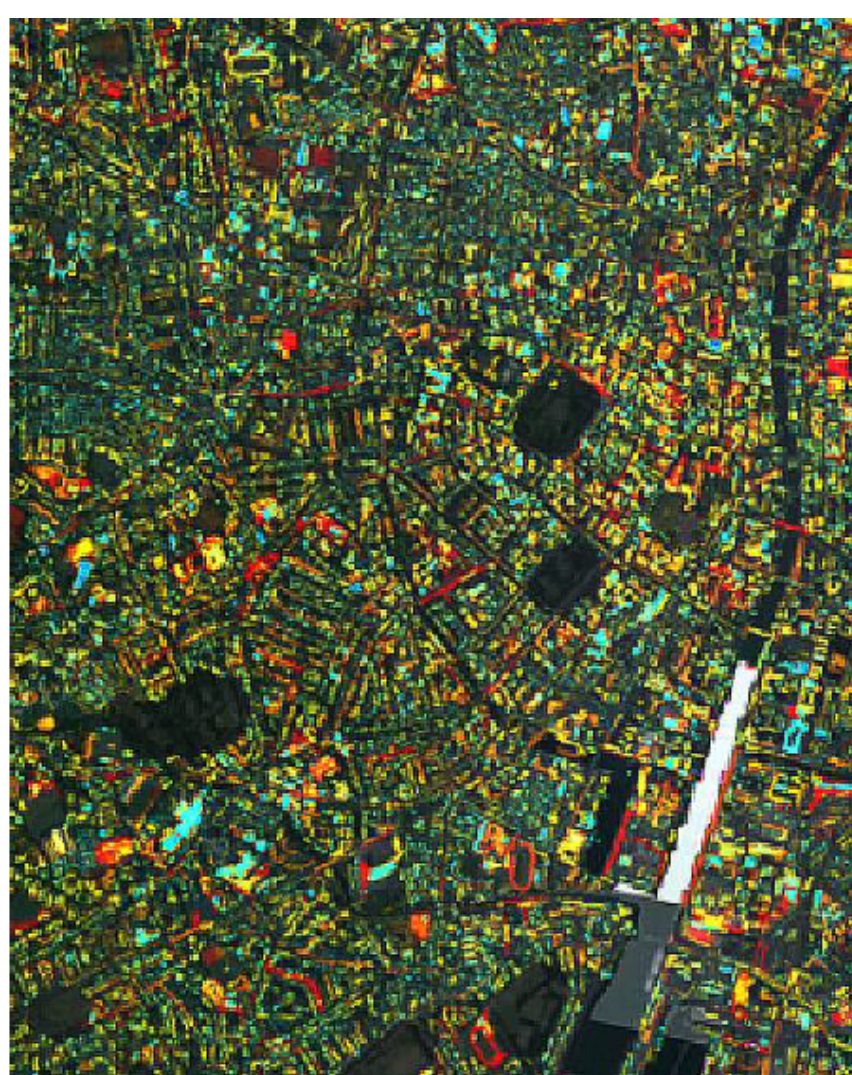


The current picture of the human footprint is incomplete. The majority of small and medium-sized settlements, critical for accounting and understanding the impact of people on the globe, remain largely invisible. The big dots may be visible, but not the all-important connections between them. And the truly vulnerable, such as those dwelling in refugee camps, shantytowns and slums are effectively missing from our global understanding.

Scientific evidence supported by new technologies should be harnessed to its full extent to generate a comprehensive and holistic understanding of the complexity of human presence and its interactions with the earth's social, economic, and ecological environments. Such vital information should enable global action to prevent and reduce disaster risk, eradicate extreme poverty and promote sustainable development.

Evidence-based reasoning, full and open data

Mission statement



*The increasing capabilities of Earth Observation satellites combined with rapid advances in geospatial sciences, analytical methods and computing power have made detailed, measurable and globally consistent descriptions of the human-made habitat possible. **This statement promotes full and open access to the data offered through these advances**, and to the global human settlement information generated from them.*

The statement recognizes that bringing together information producers, users and those responsible for associated policies will facilitate the validation of existing and new global human settlement metrics, and will determine their fitness for purpose.

*Through the establishment of a Global Human Settlement partnership, a **new generation of global settlement measurements** and products will be developed to support the concurrent post-2015 processes on sustainable development, climate change and Hyogo framework for disaster risk reduction, and the UN Third Conference on Housing and Sustainable Urban Development (Habitat III, 2016).*

Short recall of the basic principles

- Full open and free data & tools (GEO definition)
- Evidence-based reasoning, data science
- Enabling democratization of information and knowledge production
- Reproducibility, scientific control, social control > trust(new data)
- Facilitate exchange: semantic interoperability
- Inclusive, agnostic definition of “human settlement”
 - Founded on observable traces of human presence
 - From hamlet to megacity or mega-agglomeration
 - Refugees / IDPs / slum dwellers included
- No “producer/expert” vs. “users” but partners

Objectives of the Forum



- to showcase the work done so far
- to seek additional support and enlarge the partnership
- to consolidate the governance and the future action plan of the partnership

The enabling mechanism

- Sept 12 Pre-forum training course
- Sept 13 (morning) Pre-forum training course
- Sept 13 (afternoon) Open and introduction, social dinner
- Sept 14 (morning) Show cases from partners
- Sept 14 (afternoon) Ignite talks and “world café”
- Sept 15 (morning) Steering committee and action plan

News!

anticipation, details will follow in the Forum

- Great improvements in global open and free baseline data (new built-up grids, population grids) expected to be pre-released to the partnership by the end of 2017, public release early 2018
- DLR joined the full open & free club putting efforts for the GUF+ suite, announced for publication by end 2017
- A new "*people-based definition of cities and settlement*" will be presented at the UN statistical commission in 2019, tested and demonstrated leveraging on GEO Human Planet baseline data

New! Global Built-up Surfaces campaign
scheduled in October 2017 – joint efforts IIASA, JRC, DLR
<https://www.geo-wiki.org>

ENGAGING CITIZENS IN ENVIRONMENTAL MONITORING



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Games

- » Picture Pile
- » Picture Paint
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Get involved now!

Participate in these ongoing projects and join the citizen science movement to help us address global land cover issues



New! Global Built-Up Surfaces

We're launching a new campaign to validate 2 maps of built-up surfaces. Help us identify these areas! Stay tuned!



Picture Pile

Sort pictures and win great prizes! You can help us tackle global issues like deforestation.



Picture Paint

Paint pictures and win great prizes! You can help us tackle global issues like deforestation.



FotoQuestGo

FotoQuest Go

Join FotoQuest Go and explore the outdoors! Help us monitor changes in land use and land cover.

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Password

☒ Remember me next time?

Log in

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Try as guest

Administration

» Smartphone Legends

Tweets by @Geo_Wiki

IIASA Geo-Wiki
Retweeted

ECSCA
@EuCitSci

New blog post! Accessing user



European
Commission

Urban Validation (dev)

Homepage

test1

Logout

Don't show any overlays

Geocoding

Urban Validation

Start

Stop

About

Leaderboard

Quick Start Guide

Sample Set Progress:

Overview:

Your validations:

Your quality score:

Point ID: 945558

Point Lat: 35.2514

Point Lon: -82.0486

Bing image date: 01 Jan 1999

Zoom to Point

Start/Stop Validation

The campaign will
finish once all sample
points have been
validatedZoom to current
sample point10m x
10m

80m

Shade each cell if any of it is
urban

Mark all as Urban

Clear all sub-pixels

Transparency:

Comment:

Submit

Skip

Skip Reason:

no img available/
low resolution/
clouds

too difficult

View in Google Earth

View Examples

Ask experts for help

View sample point in Google
Earth

View example gallery

Ask experts for help via email

Google

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Choose background imagery

Urban Validation (dev)

Homepage

test1

Logout

Don't show any overlays

Geocoding

Urban Validation

Start

Stop

About

Leaderboard

Quick Start Guide

Sample Set Progress:

Overview:

Your validations:

Your quality score:

Point ID: 945542

Point Lat: 47.9514

Point Lon: 21.7514

Bing image date: 01 Jan 1999

Zoom Point

**Current
sample point
information**

- ☐ Sentinel-2 (SENTINEL Hub)
- ☒ Google Maps Satellite
- ☐ Bing Aerial With Labels
- ☐ Bing Aerial
- ☐ ESRI World Imagery
- ☐ Open Street Map

Shade each cell if any of it is urban

Mark all as Urban

Clear all sub-pixels

Transparency:

Comment:

Submit

Skip

Skip Reason:

no img available/
low resolution/
clouds

too difficult

View in Google Earth

View Examples

Ask experts for help

Either indicate all sub-pixels as urban/not urban**Or indicate single sub-pixels as urban/not urban by clicking on sub-pixels**

Google

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Don't show any overlays

Geocoding

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Start Stop

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Zoom to Point

Jump to point - point id:

Jump to point

Go to about page

View leaderboard

Open quick start guide

Submit or skip
validation

Experts can
jump to any
point

Shade each cell if any of it is urban

Mark all as Urban

Clear all sub-pixels

Transparency:

Comment:

Submit

Skip

Skip Reason:

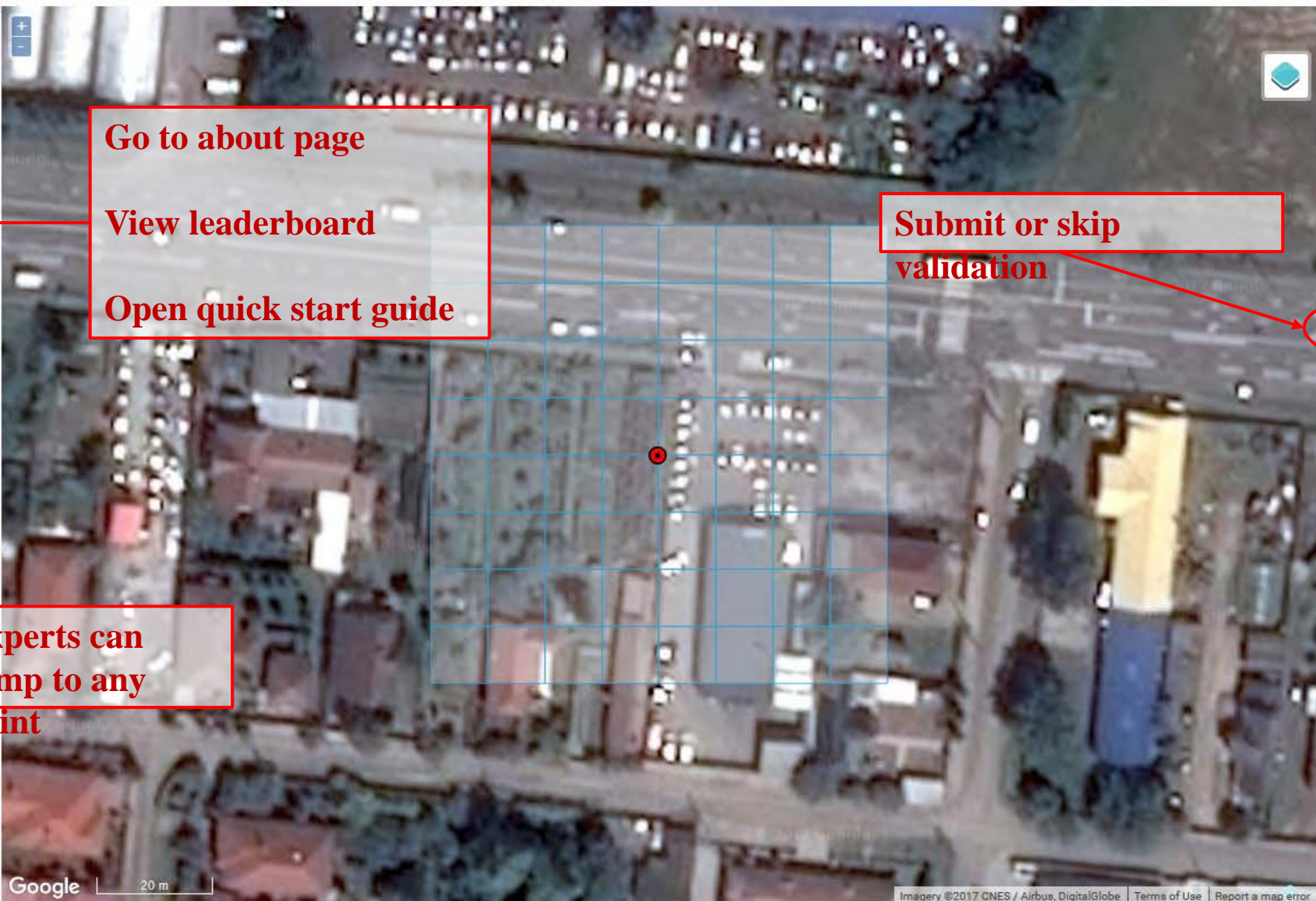
no img available/
low resolution/
clouds

too difficult

View in Google Earth

View Examples

Ask experts for help



New! Special issue on
“Global human settlement analysis to address human presence on Planet Earth”
public call for papers November 2017, paper submission: by March 31 2018
targeting publication at the IJDE: second half of 2018, earlier digital publication possible



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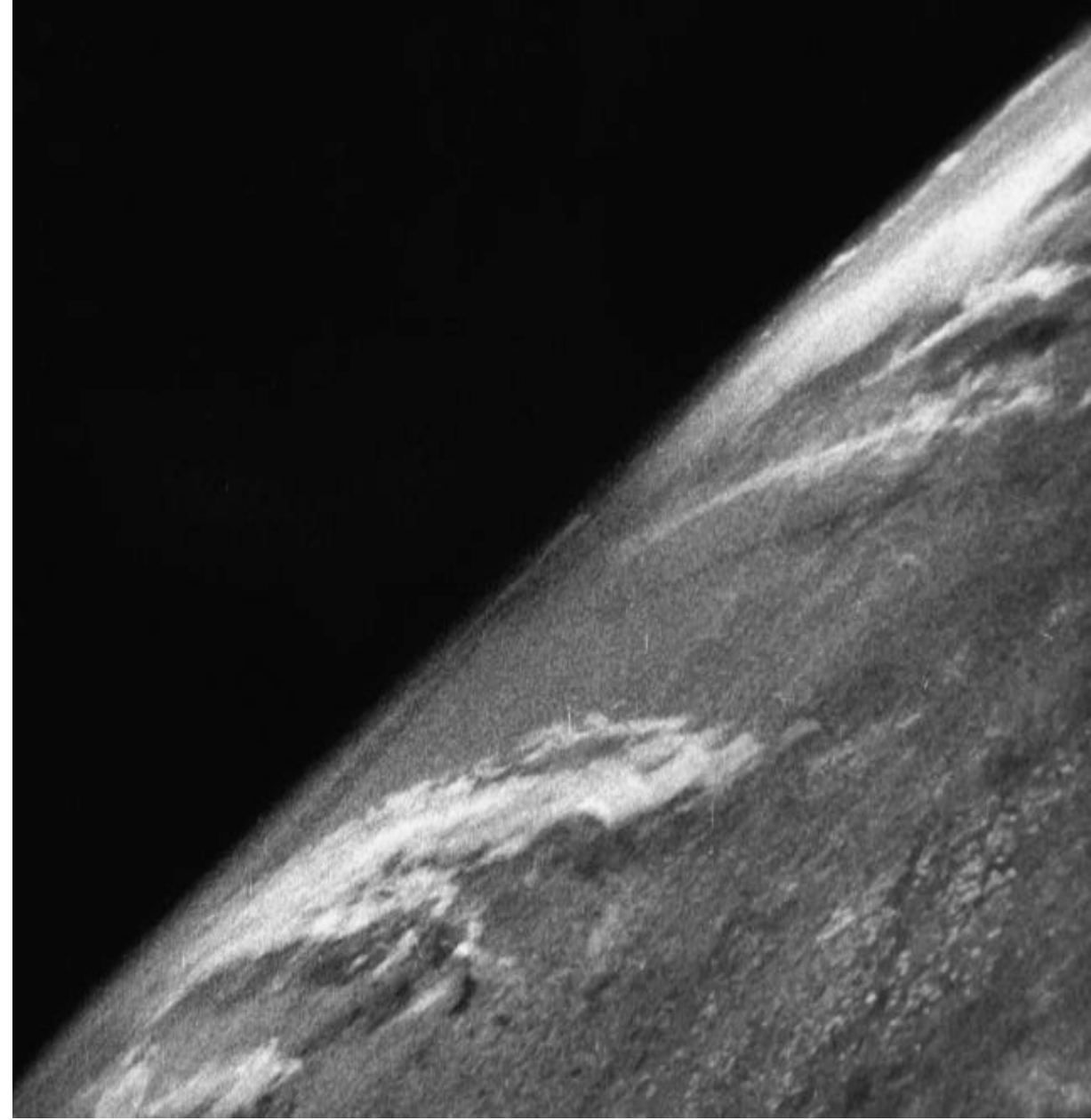
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Closing, details the world-at-a-glance

- The first ever picture from the outer space
- has been taken 70 years on ago on October, 24th, 1946
- A camera installed on a rocket that launched from White Sands Missile Range, New Mexico.
- The rocket was actually a Nazi V-2 ballistic missile prepared by a group of surrendered German rocket scientists





Thanks

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<http://ghsl.jrc.ec.europa.eu/>