

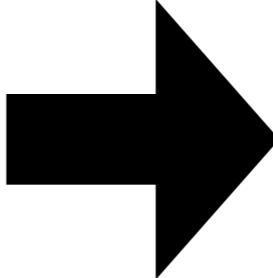
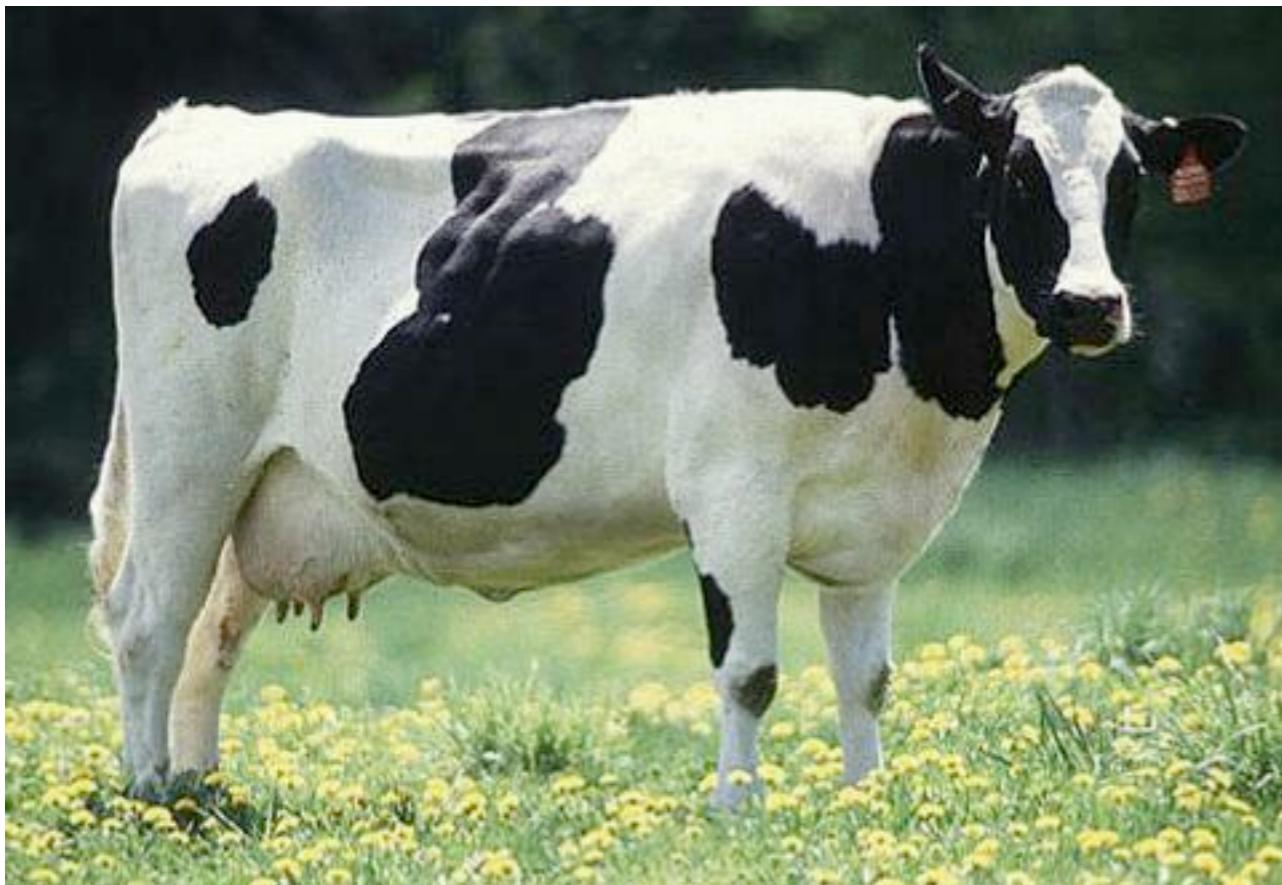
Prostorska in krajinska arheologija-Vaje

3

Dimitrij Mlekuž

Modelling

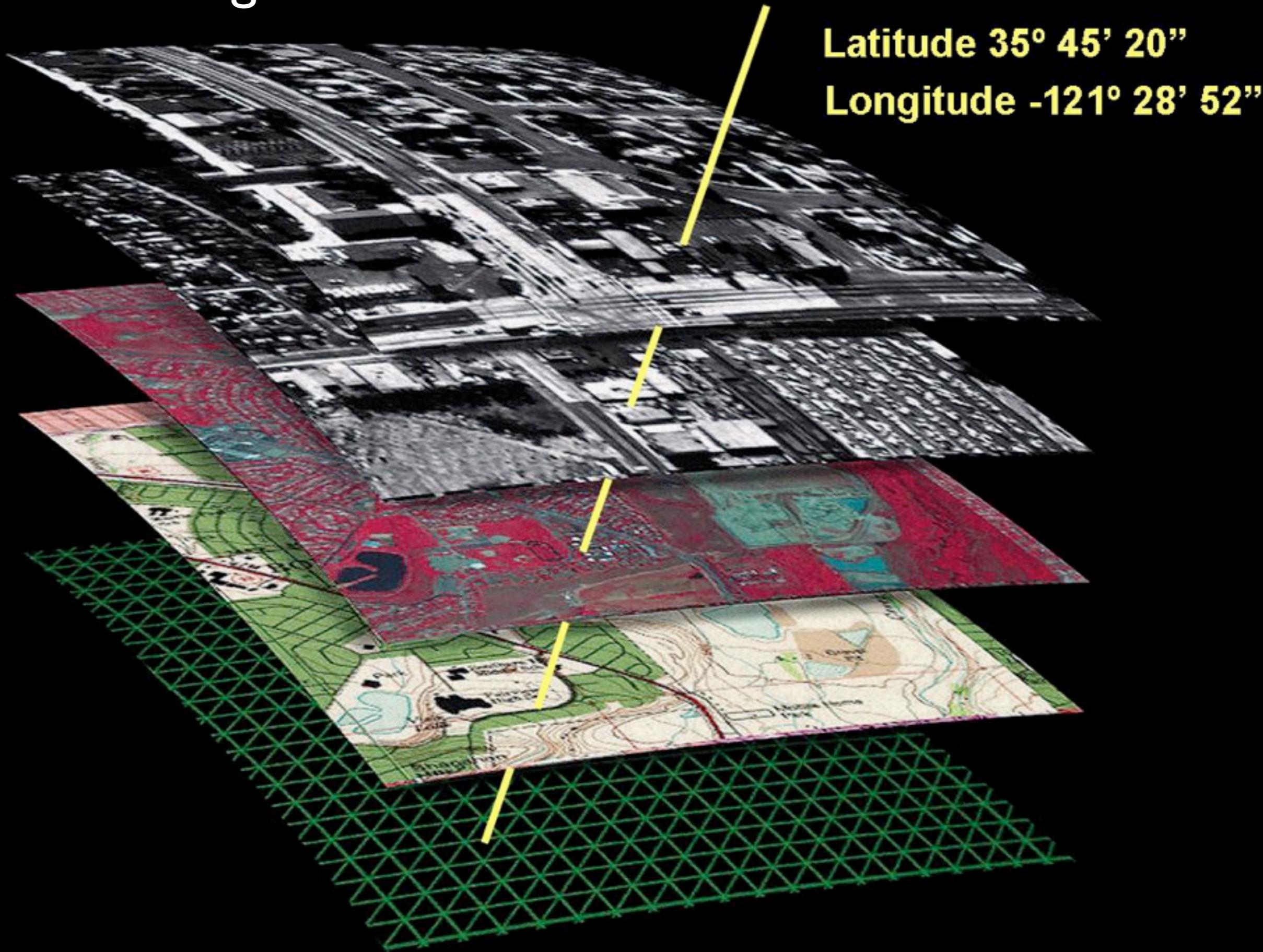
Phenomenon



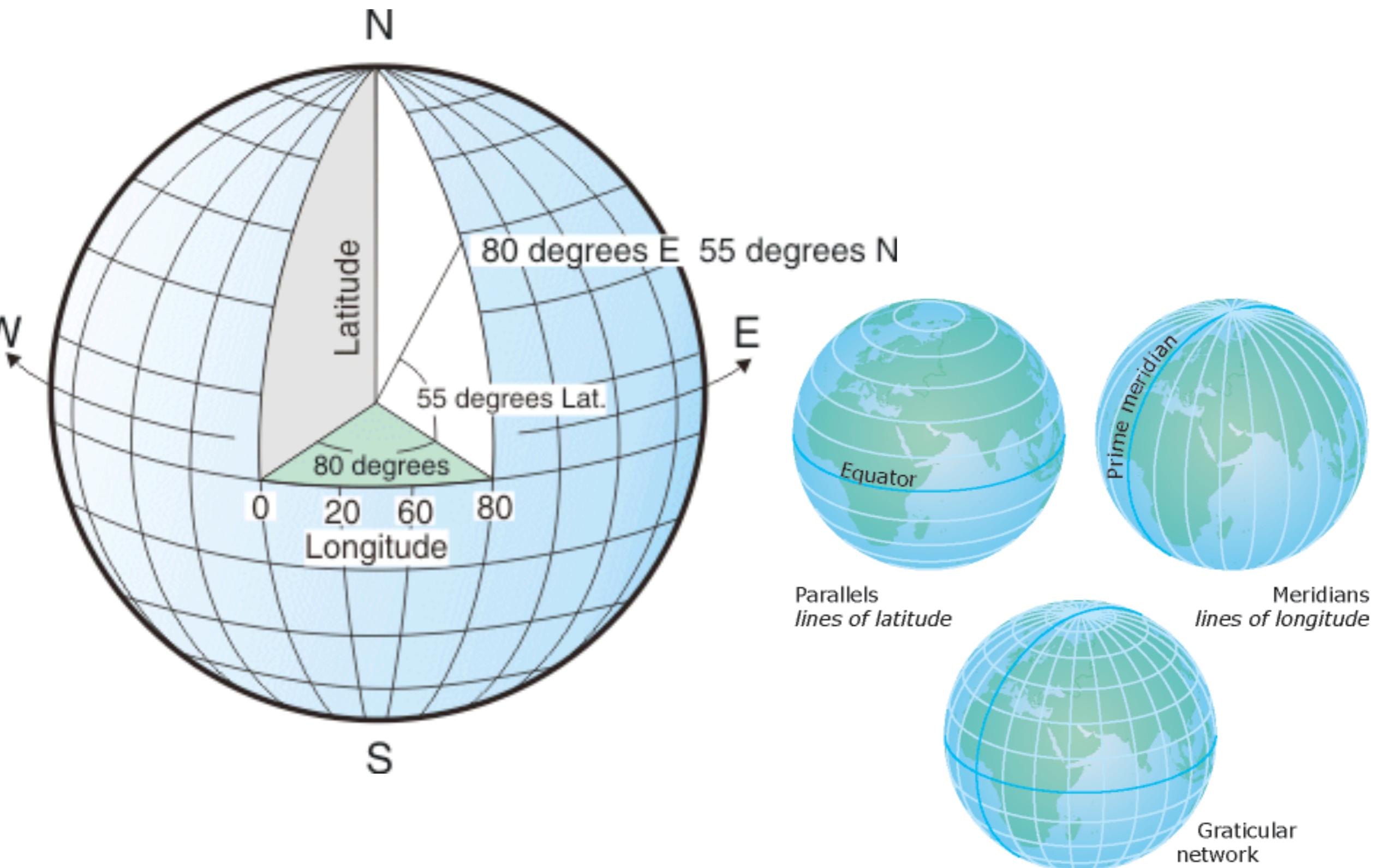
Model



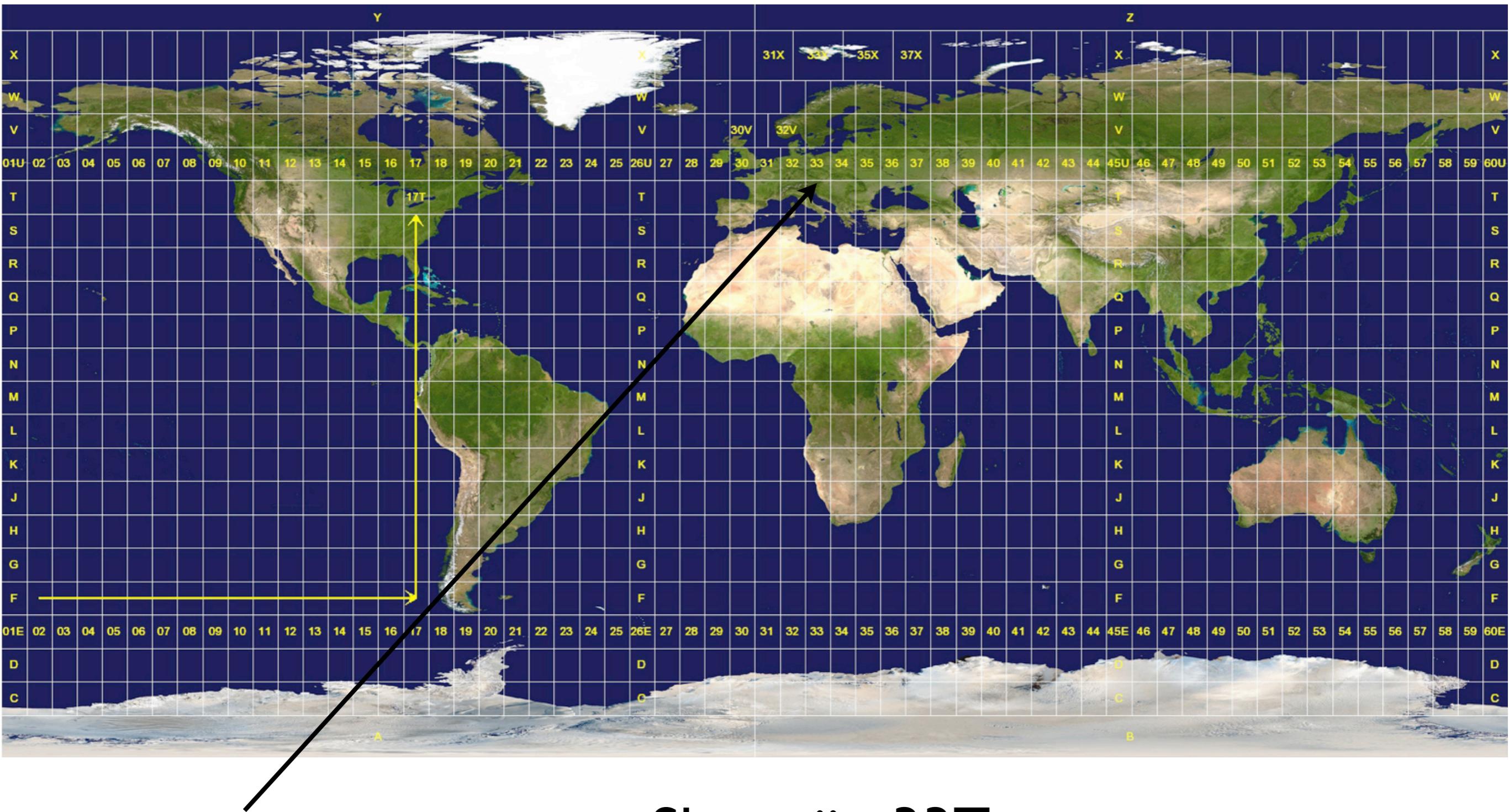
Georeferencing



Geographic coordinate system

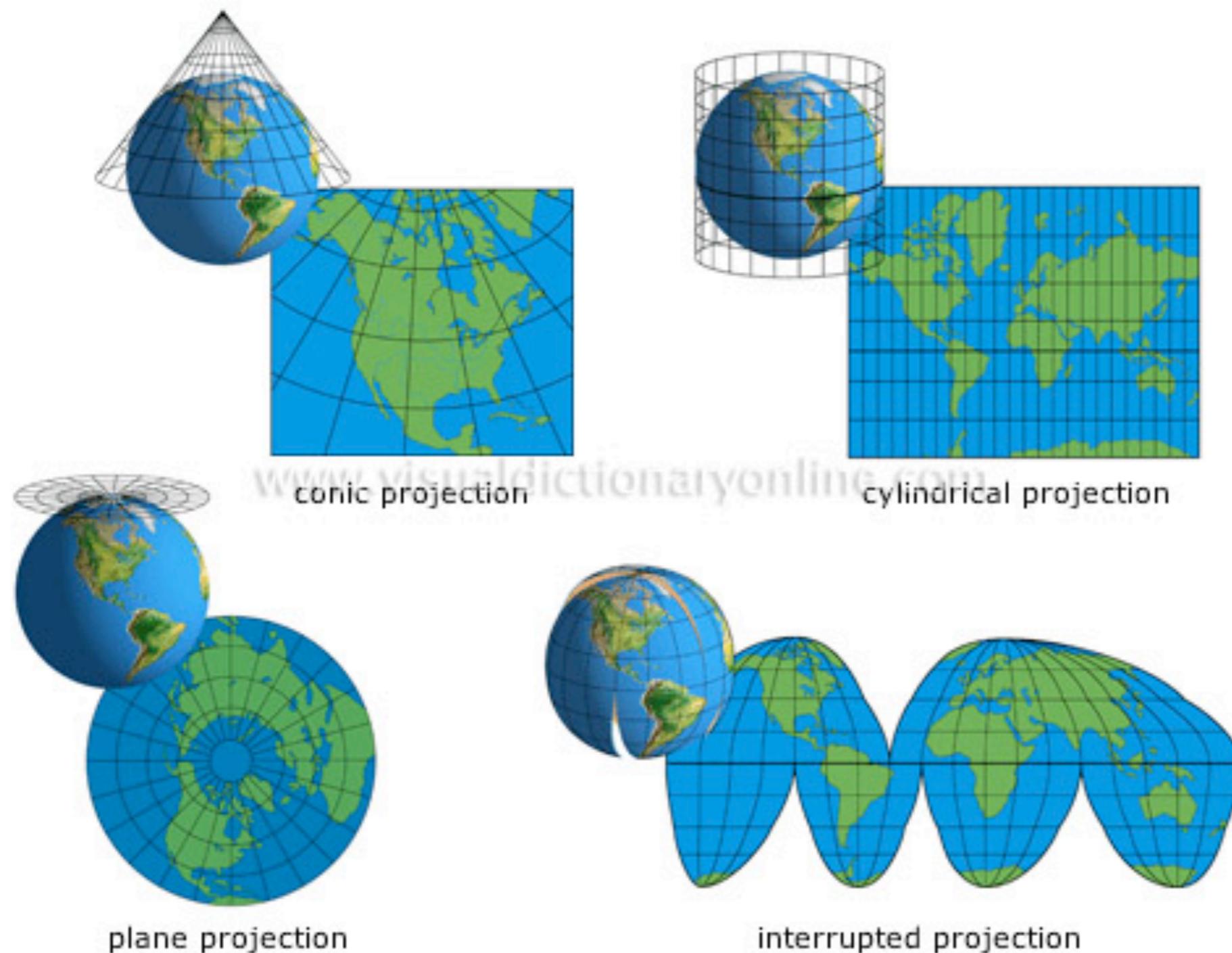


UTM (Universal Transverse Mercator)



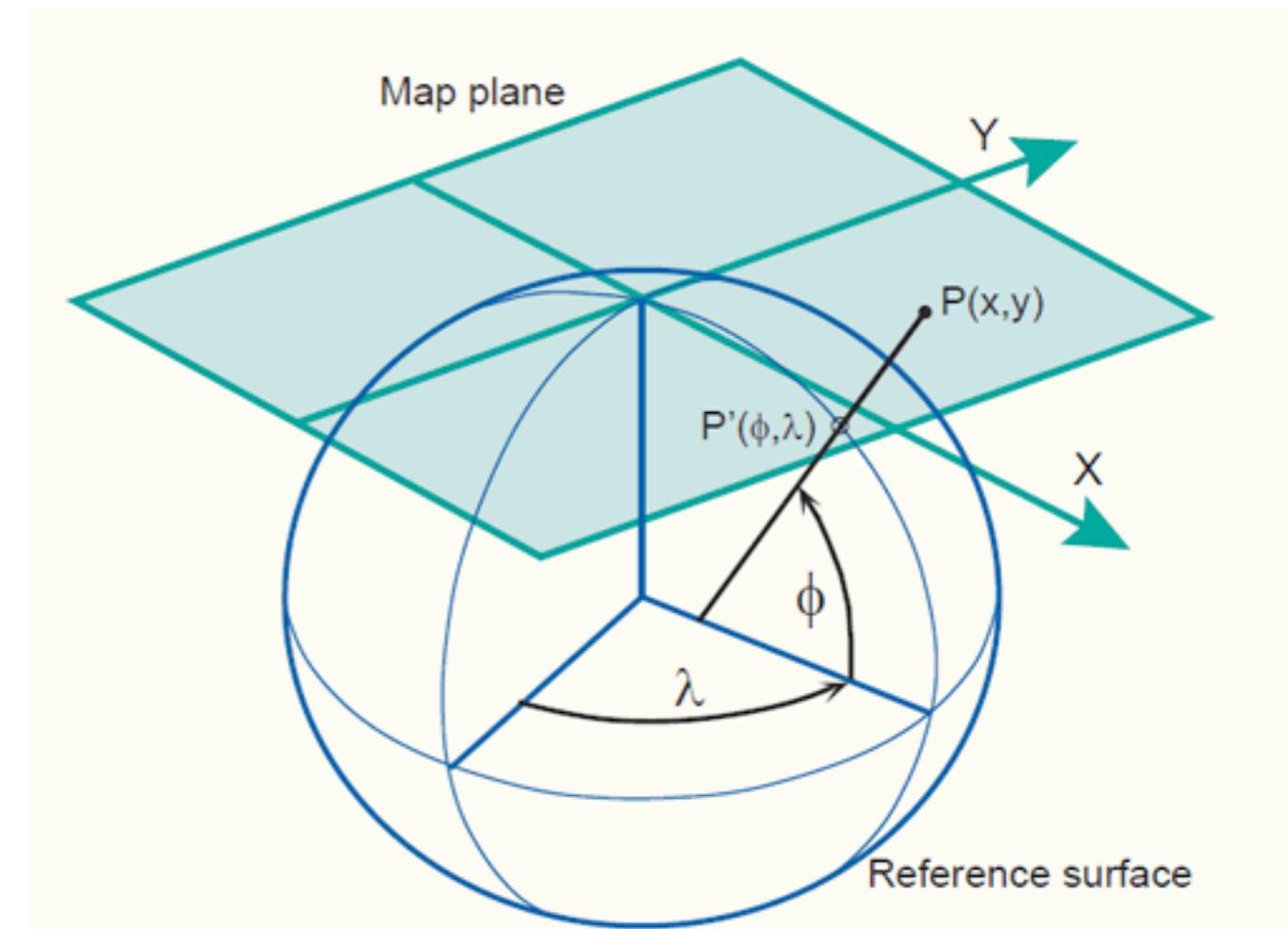
Slovenija: 33T

Prehod iz ukrivljene referenčne ploskve na ravnino



Kartografska projekcija obravnava preslikavao elipsoida v ravnino. Je analitična preslikava prostorskih (3D) točk z elipsoida (krogle) na ravnino (2D karto).

Definirana je z matematično zvezo med koordinatami točk na referenčni ploskvi in koordinatami identičnih točk, prikazanih na projekcijski ravnini.



Državni koordinatni sistemi v Sloveniji

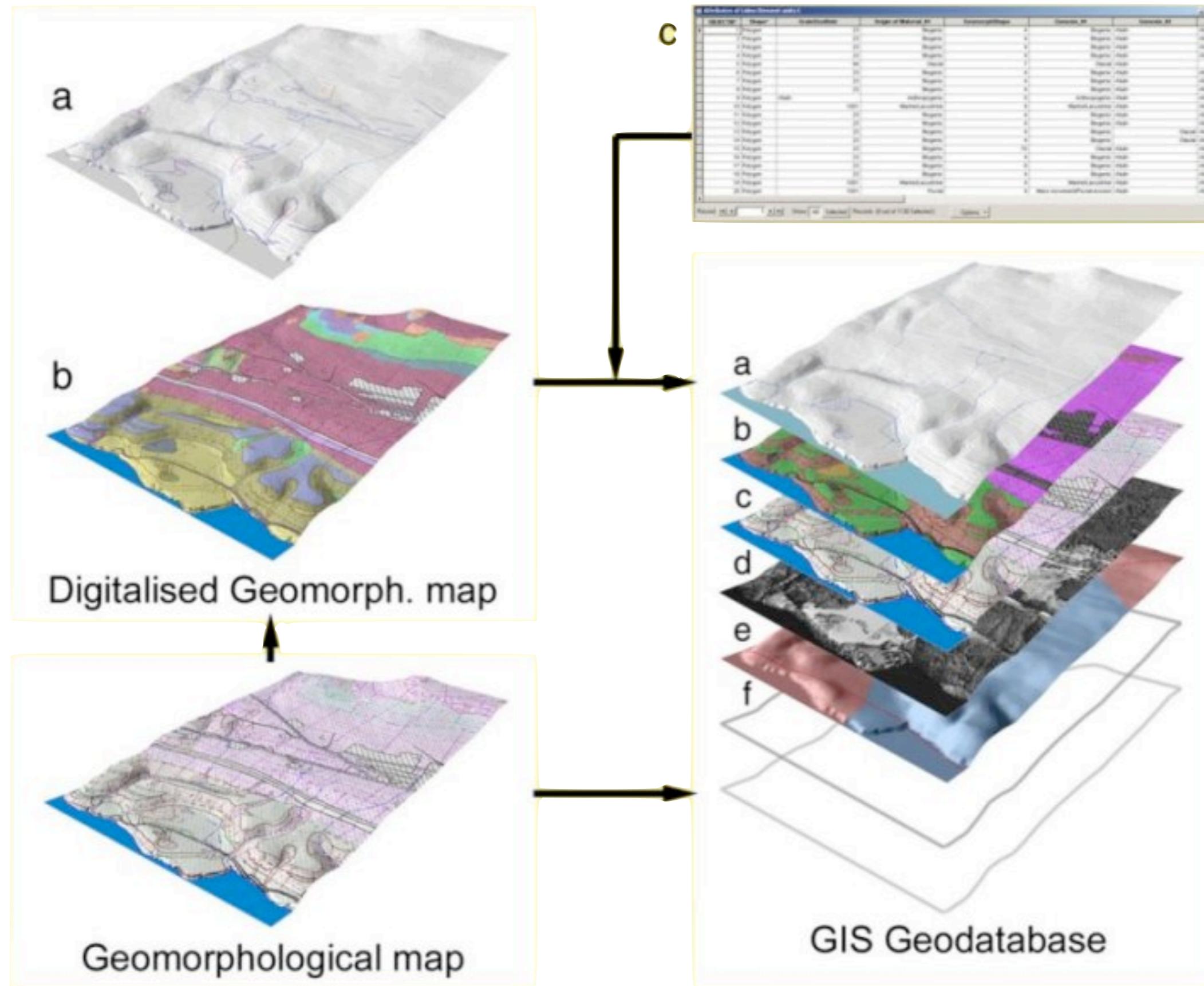
Stari: GK, D48/GK

- Oznaka kartografske projekcije: GK – Gauß-Krügerjeva projekcija
- Oznaka koordinatnega sistema: D48/GK
- Referenčna ploskev elipsoid Bessel 1841
- Številka cone: = 5 (vendar je ne označujemo)
- Širina cone: = $3^{\circ}15'$
- Geografska dolžina srednjega meridiana cone: = 15°
- Geografska širina izhodiščne paralele: = 0°
- Linijsko merilo na srednjem meridianu: = 0,9999
- Navidezni pomik proti severu: = -5.000.000 m
- Navidezni pomik proti vzhodu: = 500.000 m

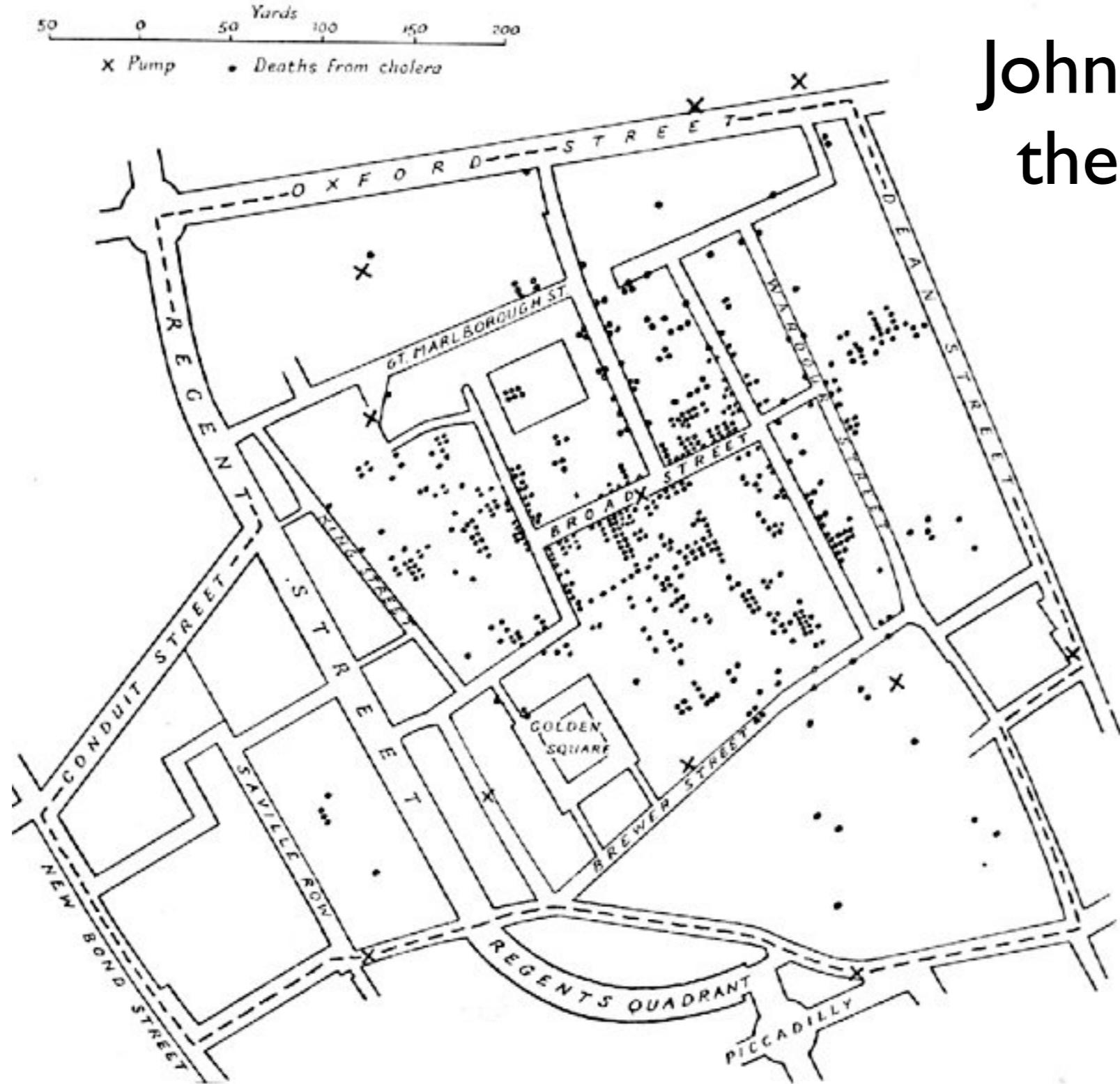
Novi koordinati sistem D96/TM

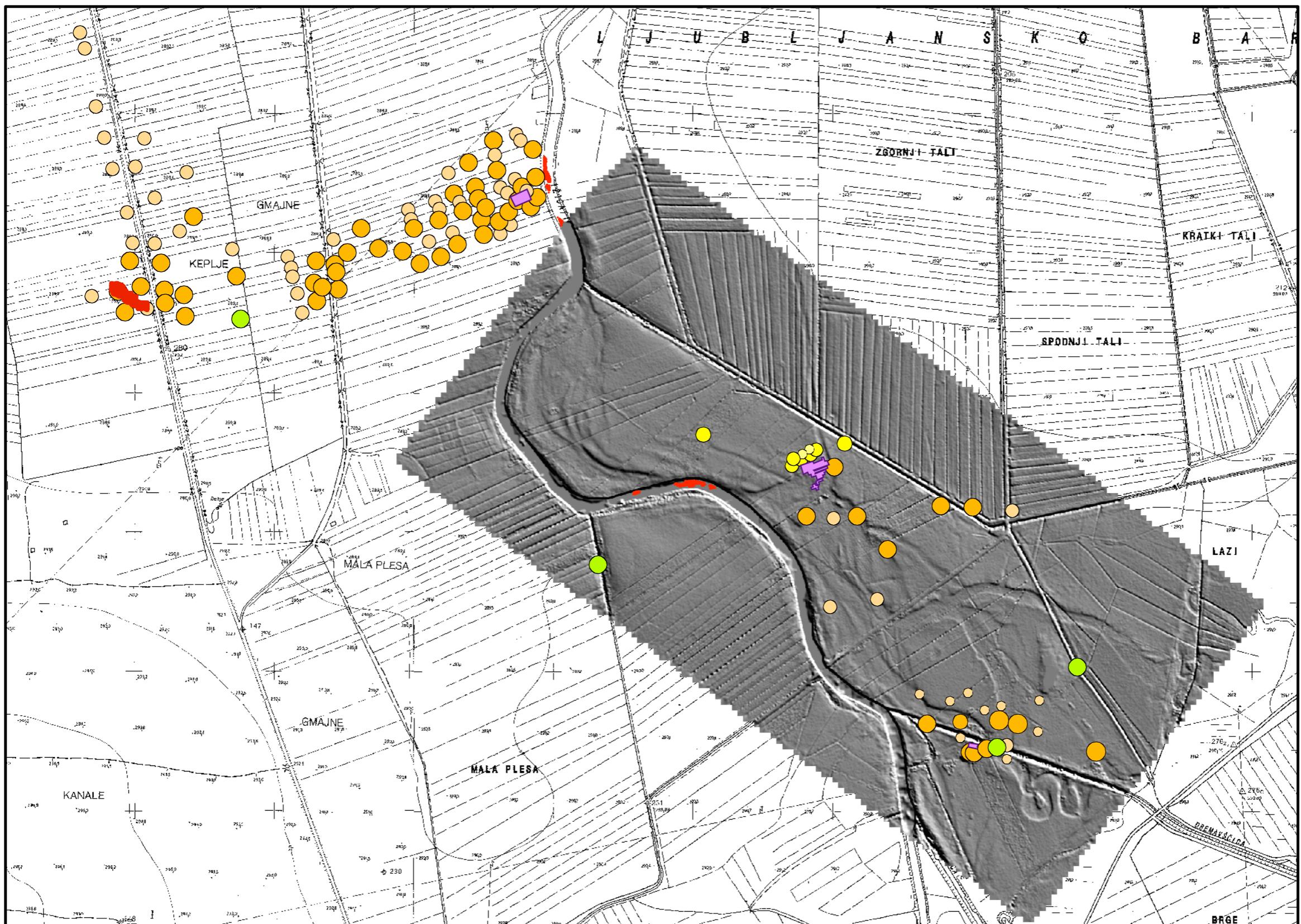
- Oznaka kartografske projekcije: TM – prečna Mercatorjeva projekcija
- Oznaka koordinatnega sistema: D96/TM
- Referenčna ploskev: elipsoid GRS80
- Številka cone: = 5 (vendar je ne označujemo)
- Širina cone: = $3^{\circ}15'$
- Geografska dolžina srednjega meridiana cone: = 15°
- Geografska širina izhodiščne paralele: = 0°
- Linijsko merilo na srednjem meridianu: = 0,9999
- Navidezni pomik proti severu: = -5.000.000 m
- Navidezni pomik proti vzhodu: = 500.000 m
- Novi slovenski horizontalni koord. sistem temelji na skupnem evropskem koord. sistemu ETRS89.

Geodatabase



John Snow's map of the Soho cholera outbreak





100m

Excavated area

Test trench

Core

Pile cluster

Chance find

Google Earth

Google Earth

Search Fly To Find Businesses Directions

Fly to e.g., San Francisco

Places My Places Sightseeing Tour Make sure 3D Buildings layer is checked Untitled Placemark Temporary Places

Layers Primary Database Borders and Labels Places Photos Roads 3D Buildings Ocean Weather Gallery Global Awareness More

Image © 2011 GeoEye
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© 2011 Tele Atlas

Imagery Date: 9/8/2009 2002 lat 45.972250° lon 14.546981° elev 289 m Eye alt 2.25 km

Geopedia – interaktivni spletni atlas in zemljevid Slovenije

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NASA World Wind Geopedia – interaktivni spletni at...

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Geopedia Pro in nove vsebine 22. 09. 11

INFO VSEBINA

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Kliknite na eno od povezav spodaj, ali pa odprite zavihek "Vsebina" in izberite posamezne sloje.

- » Avtobusni promet LPP
- » Dogodki - 7 dni
- » Kolesarstvo
- » Kultura in užitki
- » Pohodništvo
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- » Študenti
- » Turizem
- » Vreme
- » Zdravje
- » Ostale zanimive vsebine ...

Če želite najti pot med kraji, kliknite na avto na dnu zavihka oz. na zavihek Pot (Geopedia V1).

Ortofoto Višine Relief Topo

20 km

©2011 Sinergise d.o.o. | Podatki: Geodetski inštitut Slovenije

Y X: 519840 124320 46°15'45,76" N 15°15'9,27" E

http://giskds.situla.org/giskd/

NASA World Wind Register nepremične kulturne de...

Vlada Republike Slovenije
Ministrstvo za kulturo

Register nepremične kulturne dediščine

Izkanje Rezultati Legenda

Časovnica Dediščina Podlage Franciscejski kataster

Spletna verzija GisKD je informativne narave. Podatki nimajo uradnega značaja.

Viri podatkov:
- Ministrstvo za kulturo Republike Slovenije
- Arhiv Republike Slovenije
- Ministrstvo za okolje in prostor Republike Slovenije

454395.944, 128334.504

The map displays a historical cadastral plan of the Gornje Pohore and Oberzellach areas. A large yellow polygon highlights a specific region, likely indicating a protected area or a cluster of cultural heritage sites. Numerous small colored dots (pink, blue, yellow) are scattered across the map, marking individual points of interest. The map includes traditional cadastral symbols for fields and roads. Labels 'Gornje Pohore' and 'Oberzellach' are visible. A scale bar at the bottom left shows distances from 0 to 240 meters.

RKG-GERK

http://rkg.gov.si/GERK/viewer.jsp

Google

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REPUBLICA SLOVENIJA
MINISTRSTVO ZA KMETIJSTVO,
GOZDARSTVO IN PREHRANO

RKG Domov
eRKG Kazalo
KataKoma Kontakt
KatMeSiNa English

Pomoč

Nastavitev:

KMG MID: Potrdi

Aktivna plast: GERK

Plast	Vključi	Tekst	?
Orto-foto	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
Orto-foto-stanje pred 2006	<input type="checkbox"/>	<input type="checkbox"/>	
DTK50	<input type="checkbox"/>	<input type="checkbox"/>	
TK25	<input type="checkbox"/>	<input type="checkbox"/>	
TTN5	<input type="checkbox"/>	<input type="checkbox"/>	
Zemljepisna imena	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Raba	<input type="checkbox"/>	<input type="checkbox"/>	
GERK	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
GERK_31.12.2009	<input type="checkbox"/>	<input type="checkbox"/>	
GERK prekrivanja	<input type="checkbox"/>	<input type="checkbox"/>	
GERK Neskladja RABA MKGP	<input type="checkbox"/>	<input type="checkbox"/>	
► RPE, Kataster, DMR			
► Vinogradništvo			
► Kontrolni sloji 2011			
► Kontrolni sloji 2010			
► Kontrolni sloji 2009			

Aselle 11
Kavce
Gorenje Jelenje
Jelenjska gora
Balch
Oblojna
Jelenec
Jelenje 05.2009
05.2009

V mirovanju.

500063.60, 100826.82

Atlas okolja

ATLAS OKOLJA

http://gis.arso.gov.si/atlasokolja/profile.aspx?id=Atlas_Okolja_AXL@Arso

REPUBLIKA SLOVENIJA
MINISTRSTVO ZA OKOLJE IN PROSTOR
AGENCIJA REPUBLIKE SLOVENIJE ZA OKOLJE

ATLAS OKOLJA

0 km 20 km 40 km 60 km 80 km 100 km 120 km 140 km 160 km 180 km 200 km 220 km 240 km

0 km 20 km 40 km 60 km 80 km 100 km 120 km 140 km 160 km 180 km 200 km 220 km 240 km

0 km 20 km 40 km 60 km 80 km 100 km 120 km 140 km 160 km 180 km 200 km 220 km 240 km

0 km 20 km 40 km 60 km 80 km 100 km 120 km 140 km 160 km 180 km 200 km 220 km 240 km

sloji iskanje info nast. legenda

Trenutno vidni sloji:

- Začasni sloj
- Prostorske enote**
- Državna meja
- Upravne enote
- Merilna mesta**
- Državna mreža potresnih opazovalnic
- Kakovost površinskih voda
- Monitoring kakovosti morja
- Hidrološki monitoring podzemnih voda
- Kakovost podzemne vode
- Kakovost jezer
- Hidrološke meritve na površinskih vodah
- Kakovost zunanjega zraka
- Mobilne meritve zraka
- Kopalne vode
- Meteorološke postaje
- Okolje**
- Podnebje**
- Infrastruktura**
- Vode**
- Narava**
- Naravne vrednote (točke)
- Naravne vrednote (jame)
- Ekološko pomembna območja (jame)
- Državna zavarovana območja (točke)
- Lokalna zavarovana območja (točke - inf)

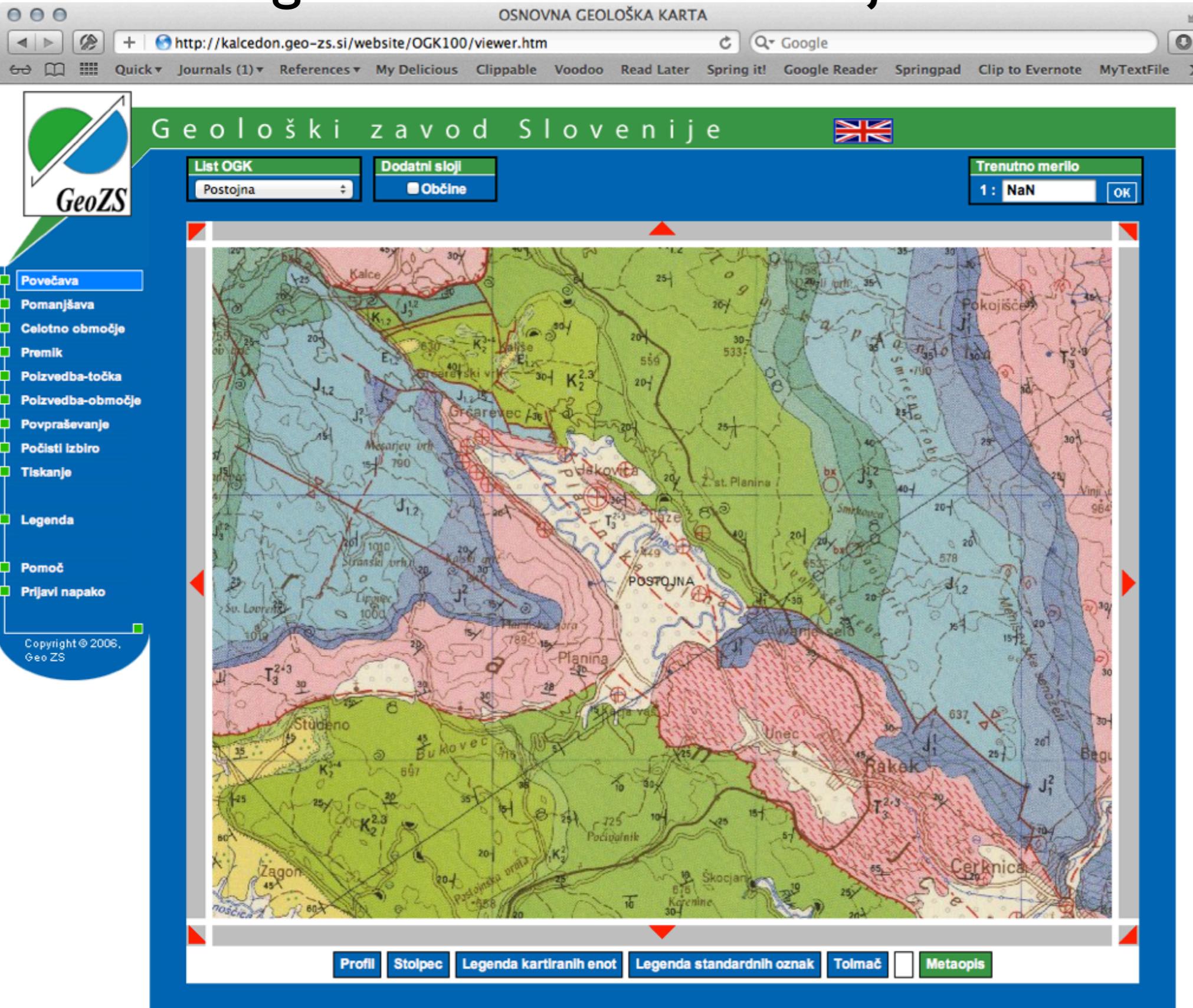
GKY: 590518 GKK: 114785 Merilo 1: 1457653

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GIS-HELP.ARSO@GOV.SI

Osnovna geološka karta Slovenije

OSNOVNA GEOLOŠKA KARTA



World coordinate converter

<http://twcc.free.fr/>

The World Coordinate Converter

ASTRONASTY: The Pharaoh's... The World Coordinate Converter Springpad Google Image Result for http://... Reference ellipsoid – Wikipedia

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Options: Manual CSV

The World Coordinate Converter

Ads by Google

Convert Coordinates

WGS84 UTM

Convert UTM

Convert GPS

Map Satellite OpenStreetMap Mapnik Relief

Drag me!

409, 6215 Divača, Slovenia

45.6685517188248°N
13.97048950195312°E

Direct link

450m

*GPS (WGS84) (deg)

Lat = 45.6685517188248°N
Lng = 13.97048950195312°E

Deg. min. sec. Dec. Degrees

Convert

ETRS89 (LCC)

ETRS89 (LCC) [?]

X = 4299793.26 m
Y = 2127422.13 m

Meters Kilometers

Convert

You can't find your reference system in the list?

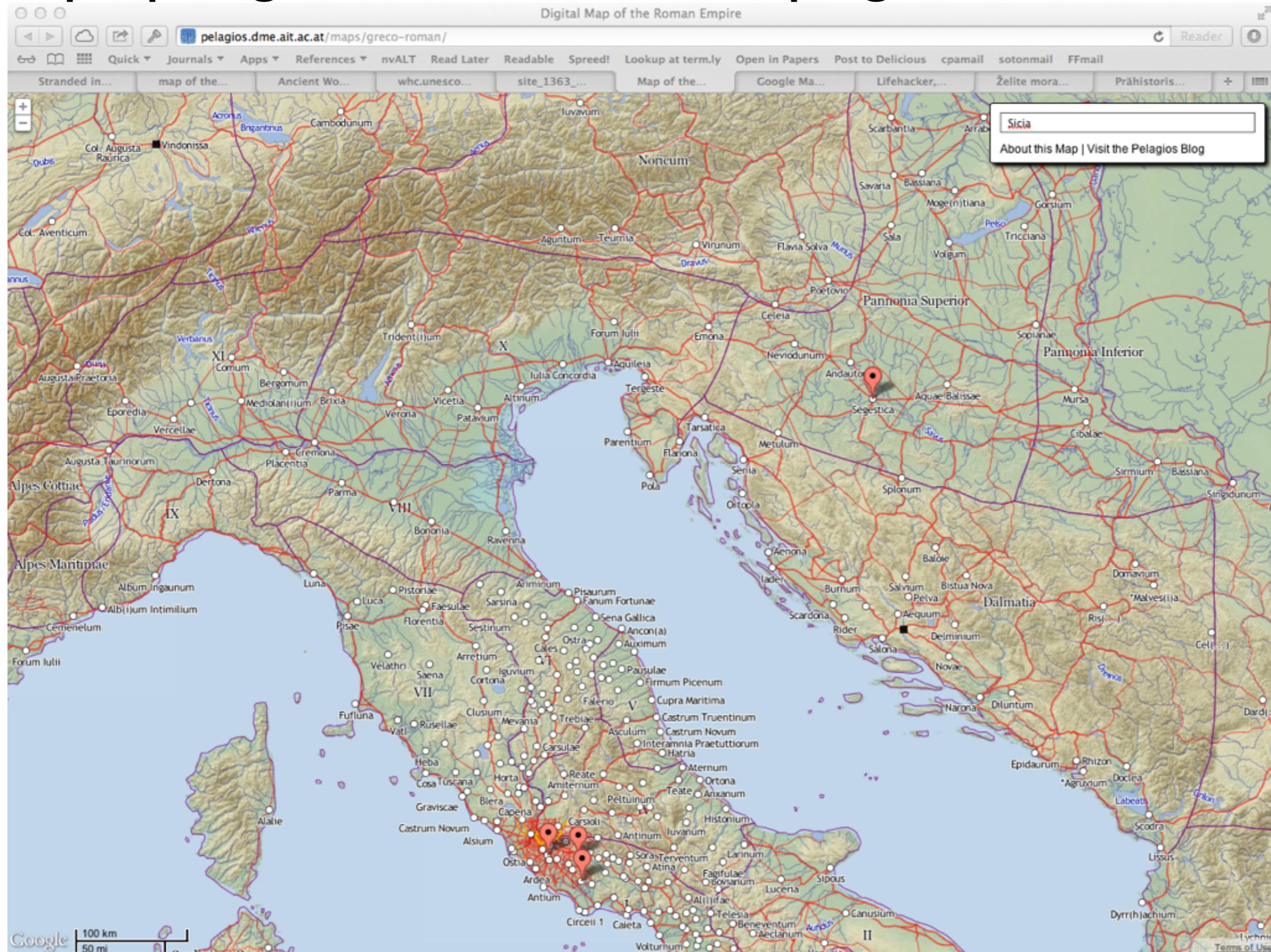
Survey Facebook RSS

CREDIT:
Hosting: Free
Constants: Spatial Reference
Libraries: Proj4js, JQuery, JQuery UI, GrottoCenter.org
Maps: Google, OpenStreetMap

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<http://pelagios.dme.ait.ac.at/maps/greco-roman/>



ORBIS

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ORBIS The Stanford Geospatial Network Model of the Roman World

CREATED BY Walter Scheidel Elijah Meeks

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Viroconium Glevum Viroconium Londinium Venta Nemetacum Rotomagus Durocortorum Castra Regina Vindobona Aquincum Olbia (Borysthenes) Theodosia Chersonesos Gorgippi

Vorgium Juliomagus Augustodunum Aventicum Cambodunum Aguntum Virunum Siscia Cibalae Singidunum Troesmis Durostorum Marcianopolis

Durnonovaria Londinium Venta Nemetacum Rotomagus Durocortorum Castra Regina Vindobona Aquincum Olbia (Borysthenes) Theodosia Chersonesos Gorgippi

Luguvalium Segedunum Eburacum Lindum Venonis Venta Icenorum Ara Agrippinensium Mogontiacum Durnonovaria Londinium Venta Nemetacum Rotomagus Durocortorum Castra Regina Vindobona Aquincum Olbia (Borysthenes) Theodosia Chersonesos Gorgippi

Burdigala Valentia Areata Tolosa Narbo Massilia Pisae Ilva Aleria Olbia Sinuessa Puteoli Palinurus Pr.

Flavium Brigantium Asturica Bracara Augusta imbriga Toletum Emerita Augusta Pax Julia Corduba Aesuris Hispalis Gades Lixus Tingi Sala Volubilis

Osca Bilbilis Dertosa Saguntum Carthago Nova Carthago Hadrumetum Thelepte Tacape

Caralis Galata Selinus Camarina Melita Caput Vada Sabratha Lepcis Magna Praetorium Arae Philaenorum Automalax

Panormus Vibo Valentia Messana Corinthus Gythion Chios Samos Myndos Caunus Germa Tarsus Antiochia Cyrrhus Sou Epiphaneia Heliopolis (Baalbek)

Ephesus Apamea (Pisidia) Pergamum Larissa Lamia Chios Samos Myndos Caunus Germa Tarsus Antiochia Cyrrhus Sou Epiphaneia Heliopolis (Baalbek)

Amphipolis Ilium Cyzicus

Amastris Sinope Constantinopolis Amisus Kotyora Tabia Sebastea

Scodra Naissus Serdica Philippopolis

Dertona Mediolanum Dertona Reate Asculum Roma Larinum Barium Tarentum Corcyra Larissa Lamia

Illyria Arelate Tolosa Narbo Massilia Pisae Ilva Aleria Olbia Sinuessa Puteoli Palinurus Pr.

Castra Regina Vindobona Aquincum Olbia (Borysthenes) Theodosia Chersonesos Gorgippi

Olbia (Borysthenes) Theodosia Chersonesos Gorgippi

200 km 200 mi

Scale = 1 : 16M

Query and Results

calculate route reset options results grid

Start: Emona

Destination: Roma

Month of travel: January

Priority: fastest cheapest shortest

Network mode

Road Coastal sea

River Coastal sea (daylight)

Open sea

Aquatic options

River: Military Civilian

Sea: Faster Slower

Road options

Speed options

Foot/army/pack animal (mod. load)/mule cart/camel caravan

Rapid military march

Ox cart

Porter/fully loaded mule

Horseback rider (routine travel)

Private travel (routine, vehicular)

Private travel (accelerated, vehicular/horseback)

Fast carriage

Horse relay

Price options

OmnisViae: Roman Route Planner- Tabula Peutingeriana and Itinerarium Antonini

www.omnesviae.org/#liter_TPPlace1585_Roma

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Članici Pussy Riot na poti v delov... Google Maps Mania: Roman Empi... OmnesViae: Roman Route Plann... 2008-150.pdf www.asprs.org/a/society/commi... +

en de el fr it nl

OMNESVIAE: ROMAN ROUTEPLANNER

a reconstruction of an antique Roman map with internet technology

| Map | Reconstruction | Acknowledgements |

ITER VESTRUM

AB: Emona (Ljubljana)

AD: ROMA (Roma)

OSTENDERE

ITER BREVISSIMUM

AB 'EMONA' AD 'ROMA'
SUMMA CDVI MILIA PASSUM / LEUGA GALICA.
FERE XXVIII DIES.

EMONA (Ljubljana)
FL. [- ? -]
xii.
NAVPORTO (Vrhnik)
vi.
LONGATICO (Logatec)
v.
IN ALPE IULIA
FL. FRGIDO
xv.
FL. FRGIDO (Ajdovščina)
PONTE SONTI (Mainizza)
xiv.
AQVILEIA (Aquileia)
FL. TILIABINTE
xxx.
CONCORDIA (Concordia Sagittaria)
xxx.

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Domača naloga

J Archaeol Res (2009) 17:263–295
DOI 10.1007/s10814-009-9030-1

New Developments in the Use of Spatial Technology in Archaeology

Mark D. McCoy · Thegn N. Ladefoged

Published online: 27 March 2009
© Springer Science+Business Media, LLC 2009

Abstract Spatial technology is integral to how archaeologists collect, store, analyze, and represent information in digital data sets. Recent advances have improved our ability to look for and identify archaeological remains and have increased the size and complexity of our data sets. In this review we outline trends in visualization, data management, archaeological prospecting, modeling, and spatial analysis, as well as key advances in hardware and software. Due to developments in education, information technology, and landscape archaeology, the implementation of spatial technology has begun to move beyond superficial applications and is no longer limited to environmental deterministic approaches. In the future, spatial technology will increasingly change archaeology in ways that will enable us to become better practitioners, scholars, and stewards.

Keywords Geographic information systems · Laser mapping · Remote sensing · Geophysical survey

Introduction

A common thread that links classic methodological innovations in field archaeology, such as the pioneering use of aerial photography by Gordon Willey or grid-based excavations by Sir Mortimer Wheeler, is how these methods have enhanced our ability to find and record the locations of archaeological remains at a level of precision necessary to interpret them. Today we use a wide variety of “spatial

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T. N. Ladefoged
Department of Anthropology, University of Auckland, Auckland, New Zealand

<https://ge.tt/6xH96WP?c>

Kaj je na lokaciji, zapisani v datoteki Točka.kml?

Kaj je zapisno v datoteki track-2007- ...kml?

Najdi in digitaliziraj gradišče
Debela Griža!

Kakšna je njegova površina?

Na katerih parcelah leži?

Georeferenciraj EmonaMap.jpg?

Digitaliziraj obzidje Emone!

Dodaj lidar posnetek gomil Poštele v Google
Earth in digitaliziraj gomile.



north: 153778.440406
south: 153274.440406
west: 548085.5
east: 548844.5

gom2.jpg

Kaj je na parceli 873 KO Divača?

Digitaliziraj enoto
dediščine v bližini in
jo položi na Google
Earth.

Katere kraške jame so v bližini?

Ka[na je geološka podlaga ?

Archaeological resource modelling in temperate river valleys: a case study from the Trent Valley, UK

A.J. Howard¹, A.G. Brown², C.J. Carey³, K. Challis³, L.P. Cooper⁴, M. Kincey³ & P. Toms⁵

Methods for mapping and determining the condition of archaeological resources while they are still underground have been in development for nearly half a century. The authors here offer an example from the frontiers of the art: the application of a package of remote sensing procedures not only designed to locate sites but to model the valley deposits which contain and cover them. The variation in success of different methods in different deposits offers a guide to the design of evaluation projects on sand and gravel terrain everywhere.

Keywords: Britain, Trent, prehistory, alluvial, floodplain, confluence, lidar, ERGI, geophysics, prospection, bore holes, radiocarbon

Introduction

Archaeological remains within river valleys are often exceptionally well preserved through a combination of the presence of high water tables, stable terrace surfaces and substantial depths of alluvium (Brown 1997; Howard *et al.* 2003). However, recent archaeological research focused on British river valleys has shown that both cultural and taphonomic factors influence the wealth and spatial distribution of the archaeological resource across floodplains and terrace surfaces. A number of authors have demonstrated a direct link between the distribution and preservation potential of archaeology and the observed geomorphology (Howard & Macklin 1999; Passmore *et al.* 2006). Such patterns of preservation are not unique to the UK and have been observed in Europe (Howard *et al.* 2004), Africa (Pearl & Dickson 2004) and North America (Bettis & Mandel 2002; Bauer *et al.* 2004). Published studies are not just restricted to empirical observations; recent analytical work within meandering river systems has sought to predict the spatial distribution of archaeology

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² School of Geography, University of Southampton, Highfield, Southampton, SO17 1BJ, UK (Email: A.G.Brown@soton.ac.uk)

³ Birmingham Archaeology and VISTA Centre, University of Birmingham, Edgbaston, Birmingham, B15 2TT, UK (Email: C.Carey@bham.ac.uk; K.Challis@bham.ac.uk; m.e.kincey@bham.ac.uk)

⁴ University of Leicester Archaeological Services (ULAS), University of Leicester, University Road, Leicester, LE1 7RH, UK (Email: lpc2@le.ac.uk)

⁵ Department of Natural and Social Sciences, University of Gloucestershire, Swindon Road, Cheltenham, GL50 4AZ, UK (Email: ptoms@glos.ac.uk)

Received: 19 February 2007; Revised: 13 April 2008; Accepted: 23 June 2008

ANTIQUITY 82 (2008): 1040–1054