Mujesuo

Occurence type: occurrence

Commodity	Rank	Total measure	Total production	Total resource	Importance
gold	1	NA	NA	NA	NA

Easting EUREF: 599636,341
Northing EUREF: 7139805,447
Easting YKJ: 3599849
Northing YKJ: 7142795

Discovery year: 1994
Discovered by: Geological Survey of Finland
Province: Kuhmo (Ni, Ag, Au)
District: Kuhmo (Au)
Comments: The first indication was an auriferous sample from a glacial erratic boulder, found by an amateur prospector in 1993; the deposit was detected by trenching and drilling
References: 5, 7, 8

Mineral deposit type

Group: Metallogenic deposit
Main type: Orogenic (metamorphic hydrothermal)
Comments: Clearly epigenetic, "mesothermal" mineralisation with a distinct structural control, formed during late-Archaean cratonisation. Fluid inclusions suggest a single-event mineralisation at about 2.5-3.5 kbar, 450-500°C.
References: 4

Dimension

Expression: exposed
Form: NA
Shape: NA
Length (m): NA
Width (m): NA
Thickness (m): NA
Depth (m): NA
Area (ha): NA
Dip azim: NA
Dip: NA
Plunge azim: NA
Plunge dip: NA
Orientation method: NA
Dimension comments: Extent not reported

Holder history

Current holder: Kuhmo Minerals Oy
Years: 2023
Holding type: Application for exploration permit

Previous holders:

Company	Years	Holding type	Comments
Magnus Minerals Oy	2021	Application for reservation	NA

Mineral Exploration Network (Finland) Limited	2009-2010	Claim reservation (old law)	NA
Geological Survey of Finland	2004-2005	NA	NA
Ilmari Exploration Oy	2002-2003	NA	NA
Geological Survey of Finland	1994-1998	NA	NA

EXPLORATION ACTIVITY

Geological Survey of Finland

Years	Activity type	Geologist	Exploration result	Ref
1993-1998	detailed geology	Erkki Luukkonen	key geological features	3, 6, 9
	First indication was an auriferous sample from a glacial erratic boulder.			

1993-1998	excavation	Erkki Luukkonen	mineral occurrences	3, 6, 9
	The deposit was detected by trenching and drilling			

1993-1998	core drilling	Erkki Luukkonen	mineral occurrences	3, 5, 6, 9
	The deposit was detected by trenching and drilling; Core drilling (reconnaissance drilling): 17 diamond-drill holes, total 997 m.			
	Intersections			
	HoleID	NA		
	From-To	NA		
	Length	0,5m		
	gold	100ppm		
	HoleID	NA		
	From-To	NA		
	Length	1m		
	gold	9,06ppm		

1993-1998	detailed geophysics	Erkki Luukkonen	geophysical anomaly	3, 6, 9
	ground magnetic, electromagnetic and IP survey			

1993-1998	detailed geochemistry	Erkki Luukkonen	geochemical anomaly	9
	Local Au, As and Ni anomalies in till.			

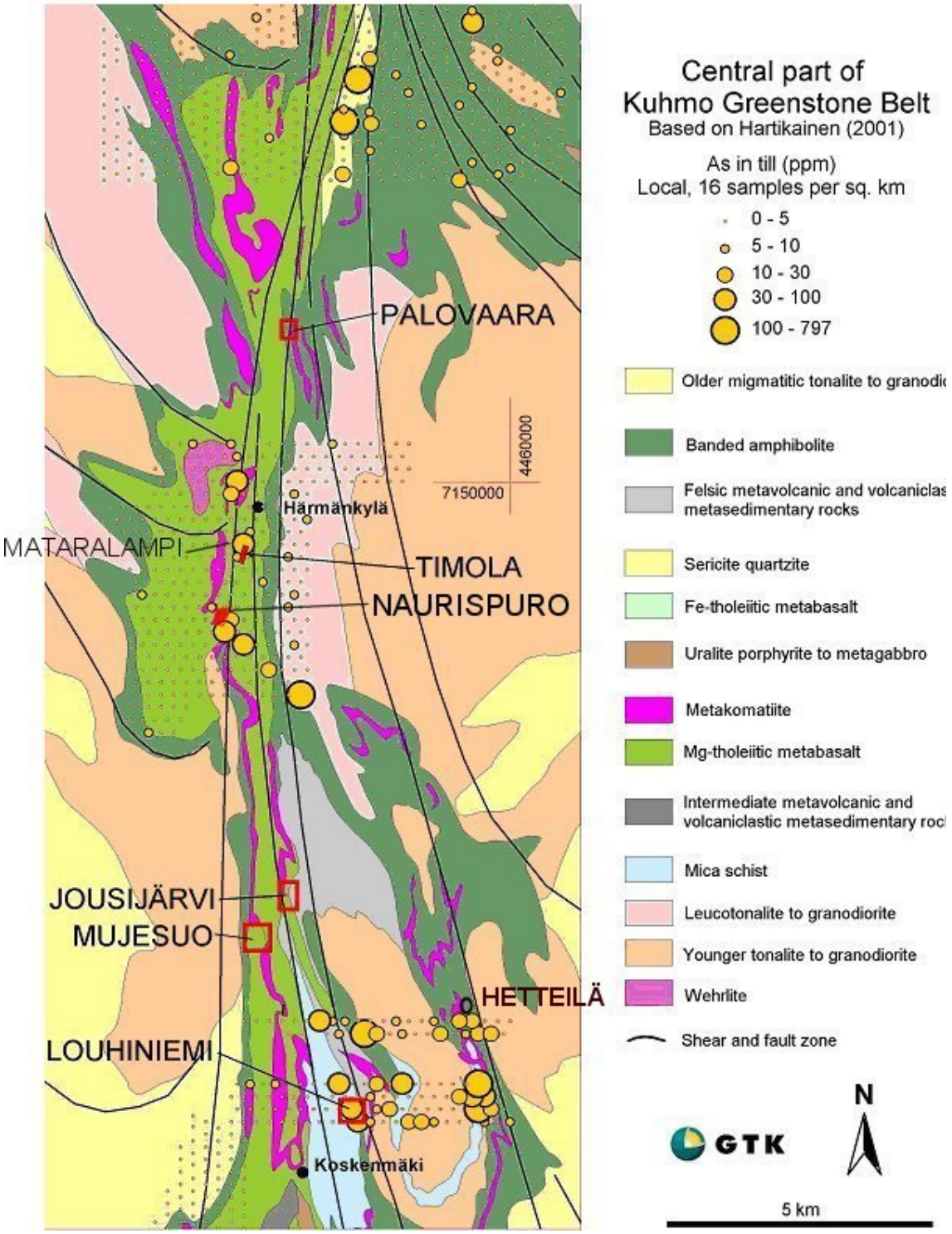
1990-2001	regional geochemistry	Markku Tenhola	geochemical anomaly	
	Greenstone belt-wide till-geochemical survey with 16 damples per one sq.km. Regional Au, As and Ni anomalies in till			

1988-1988	regional geochemistry	Markku Tenhola	geochemical anomaly	3
	Country-wide till-geochemical survey			

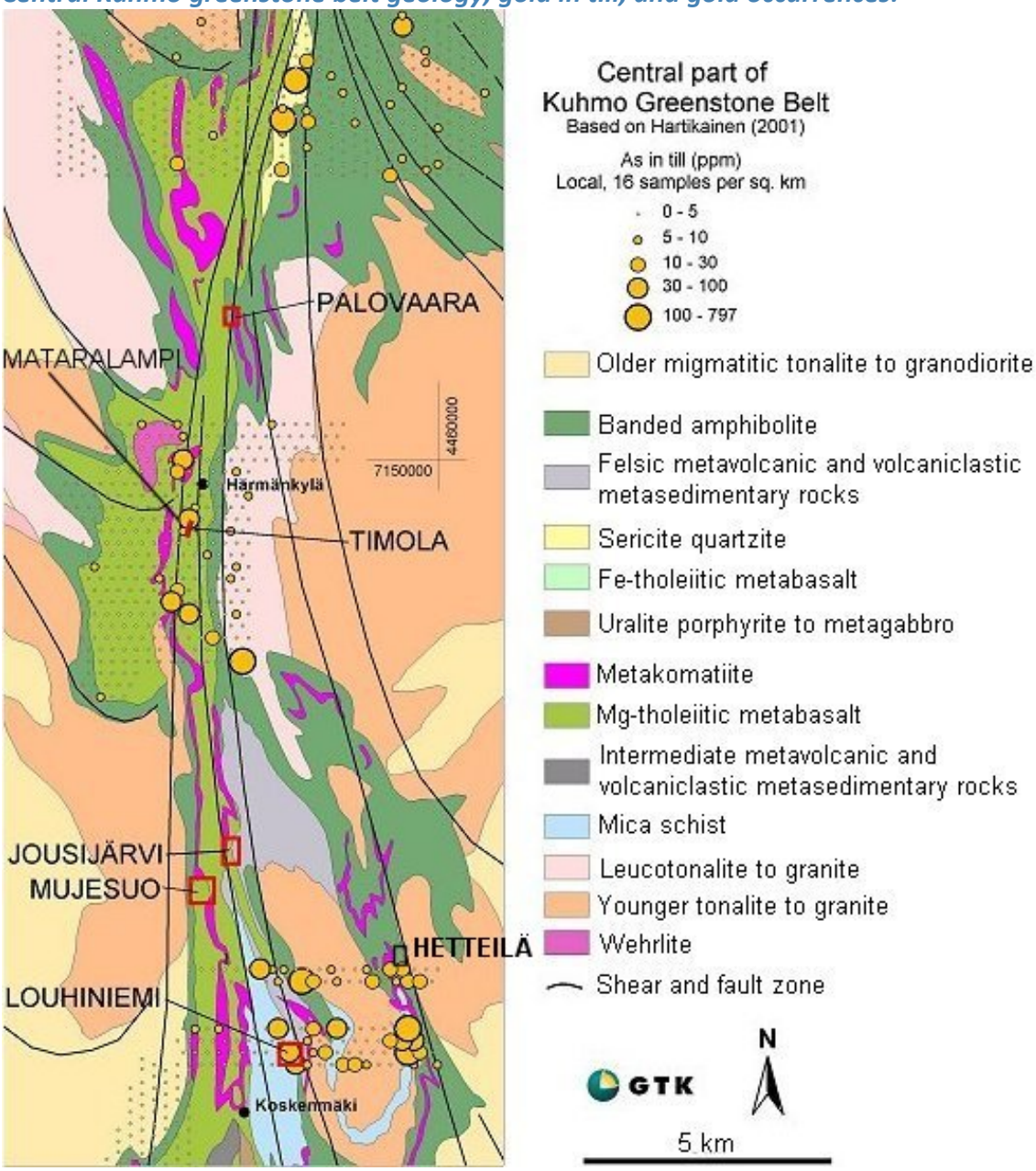
1987-1987	regional geophysics	NA	key geological features	
	Low-altitude airborne magnetic, electromagnetic and radiometric survey			

Figures

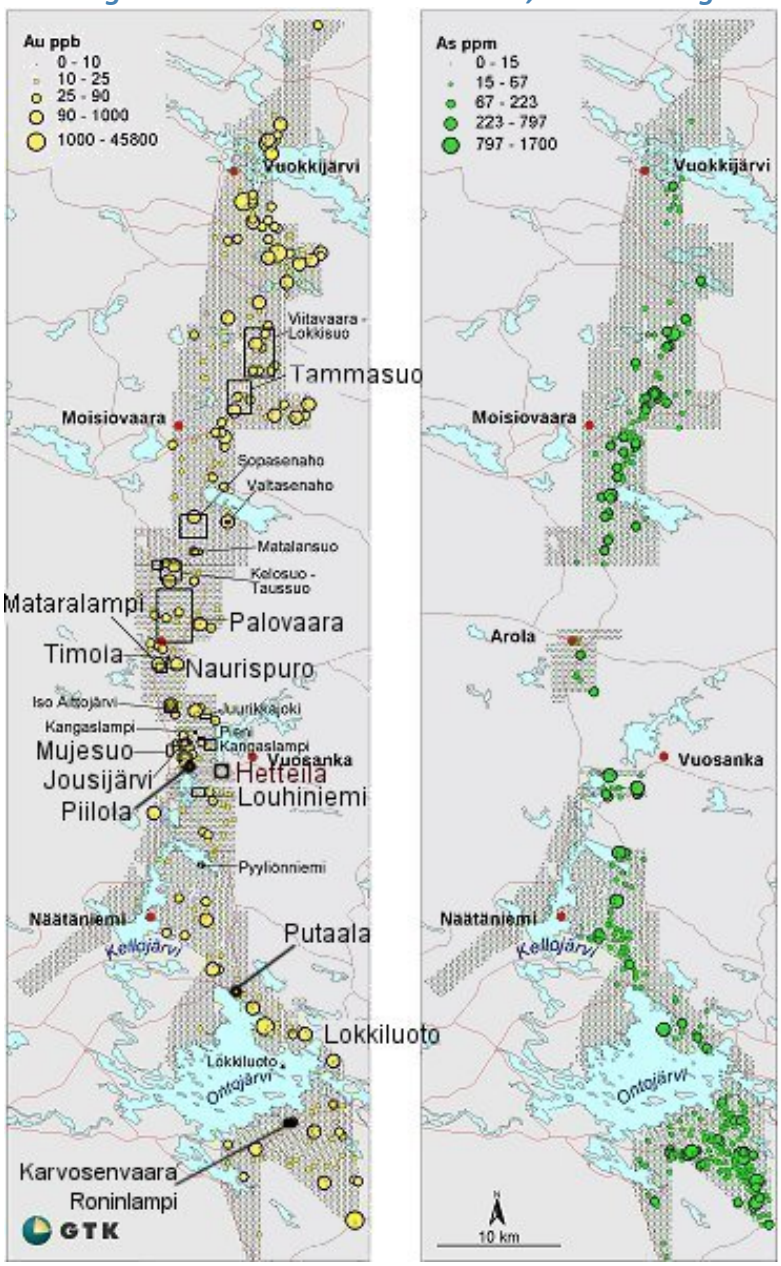
Palovaara-Louhiniemi area geology, gold in basal till, and gold occurrences:



Central Kuhmo greenstone belt geology, gold in till, and gold occurrences:



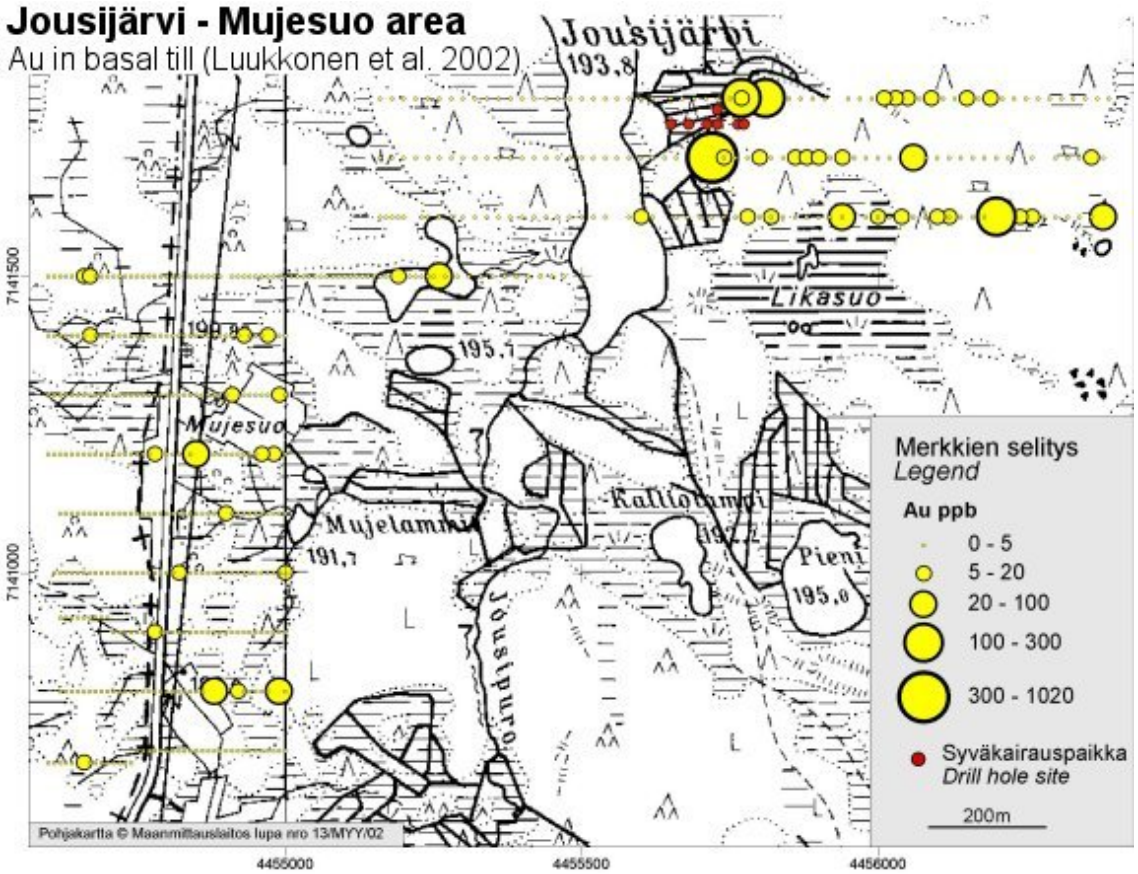
Kuhmo greenstone belt As and Au in till, and known gold occurrences:



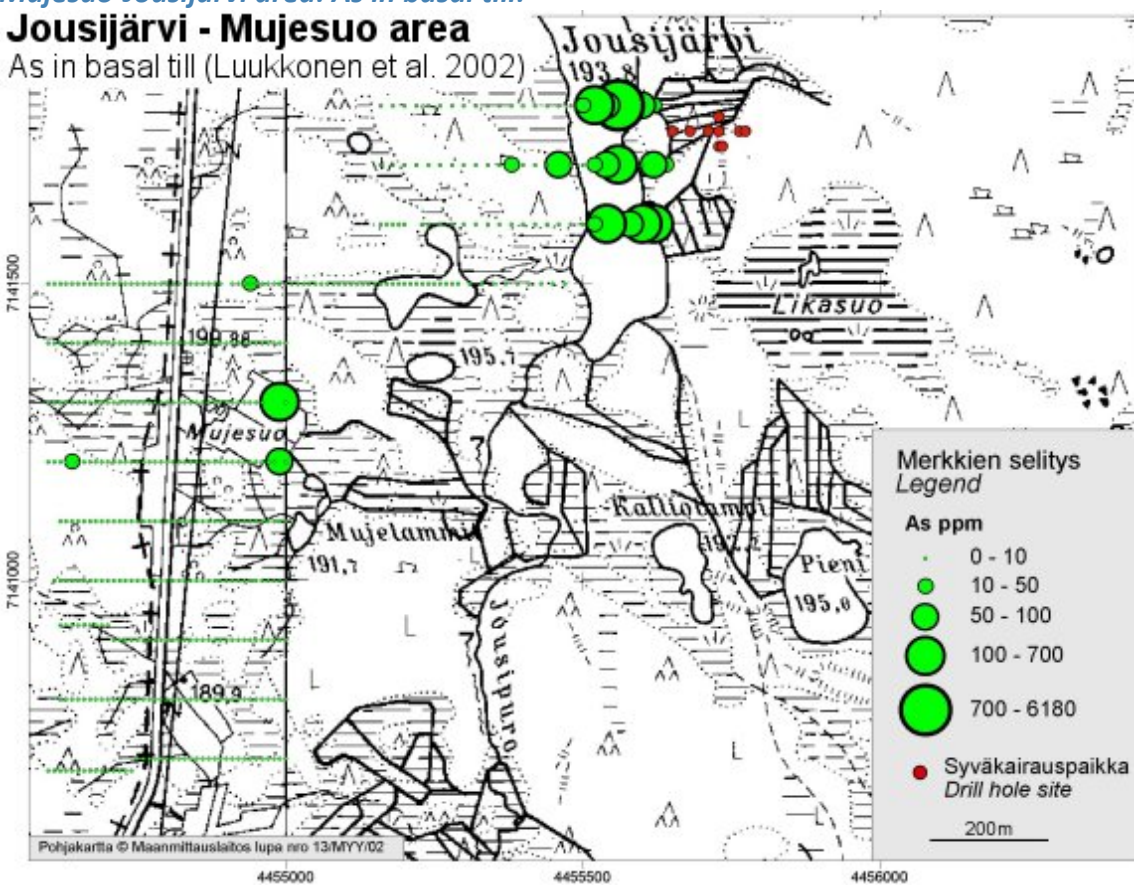
Kuhmo greenstone belt

As (ppm) and Au (ppb) in till
(Luukkonen et al. 2002)

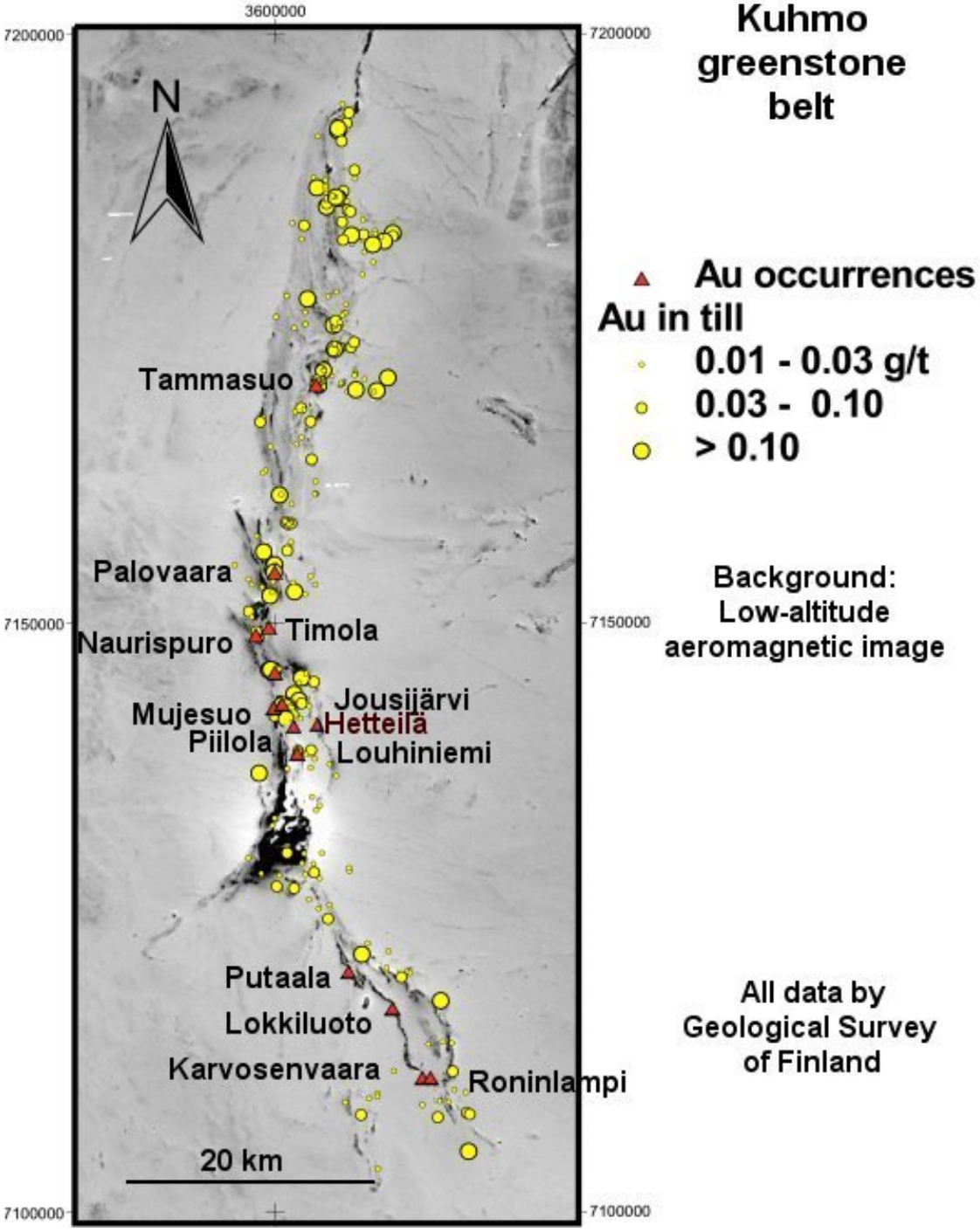
Mujesuo-Jousijärvi area: Au in basal till:



Mujesuo-Jousijärvi area: As in basal till:



Kuhmo greenstone belt aeromagnetic image, Au in till, and known gold occurrences:



GEOLOGY

Host rock: Mafic volcanic rock, Quartz vein, Meta-ultramafic-rock

Mafic volcanic rock (Host rock)

Rock type: Host rock
Proportion: major
Grain size: NA
Color: NA
References: 1, 3, 6, 9
Comments: Structures controlling mineralisation: N-S trending mylonites which are late-D3 or D4 structures

Ore minerals:

Mineral	Proportion	Mineral texture
Chalcopyrite	minor	
Gold	minor	
Pyrite	major	
Pyrrhotite	major	

Other minerals:

Mineral	Proportion	Mineral texture
Chlorite	present	
Quartz	present	
Tremolite	present	

Alteration:	Distribution:	Degree:	Relation to mineralization:
calcsilicate alteration	Disseminated	Weak	Syn
Comments: Formation of Ca-amphibole			
carbonate alteration	Disseminated	Weak	Syn

Metamorphic description:

Type:	Facies:	Degree:	Relation to mineralization:	Min P- Max P (kbar)	MIn T- Max T (°C)
Regional	greenschist metamorphic facies	medium metamorphic grade	NA		
Comments: Upper greenschist facies regional metamorphism. A very weak, unevenly distributed Palaeoproterozoic overprint.					

Geological age:

Geological era:	Max age - Minage (Ma):	Inferred age (Ma):	Age of mineralization:
Archean (4000-2500 Ma)	2500-4000		N
Comments: Mineralisation during ca. 2700-2650 Ma.			

Quartz vein (Host rock)

Rock type: Host rock
Proportion: minor

Grain size: NA
Color: NA
References: 6
Comments: Auriferous quartz veins, generally 5-10 cm wide

Ore minerals:

Mineral	Proportion	Mineral texture
Gold	present	

Other minerals:

Mineral	Proportion	Mineral texture
Quartz	major	

Meta-ultramafic-rock (Host rock)

Rock type: Host rock
Proportion: major
Grain size: NA
Color: NA
References: 1, 6, 9
Comments: Sequence dominated by mafic metavolcanic rocks with thin ultramafic (komatiitic?) interlayers.

Metamorphic description:

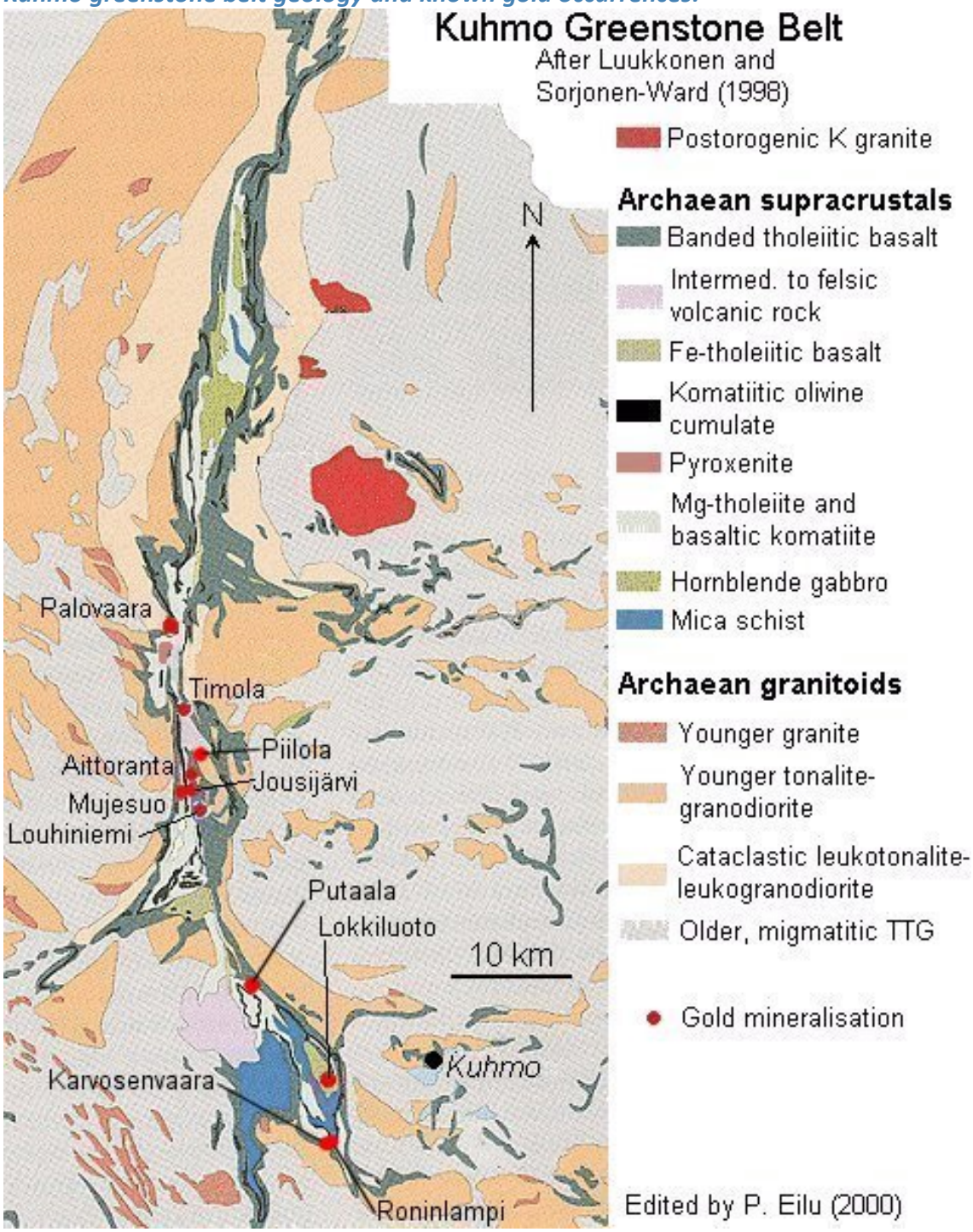
Type:	Facies:	Degree:	Relation to mineralization:	Min P- Max P (kbar)	MIn T- Max T (°C)
Regional	greenschist metamorphic facies	low metamorphic grade	NA		
Comments: Upper greenschist facies regional metamorphism. A very weak, unevenly distributed Palaeoproterozoic overprint.					

Geological age:

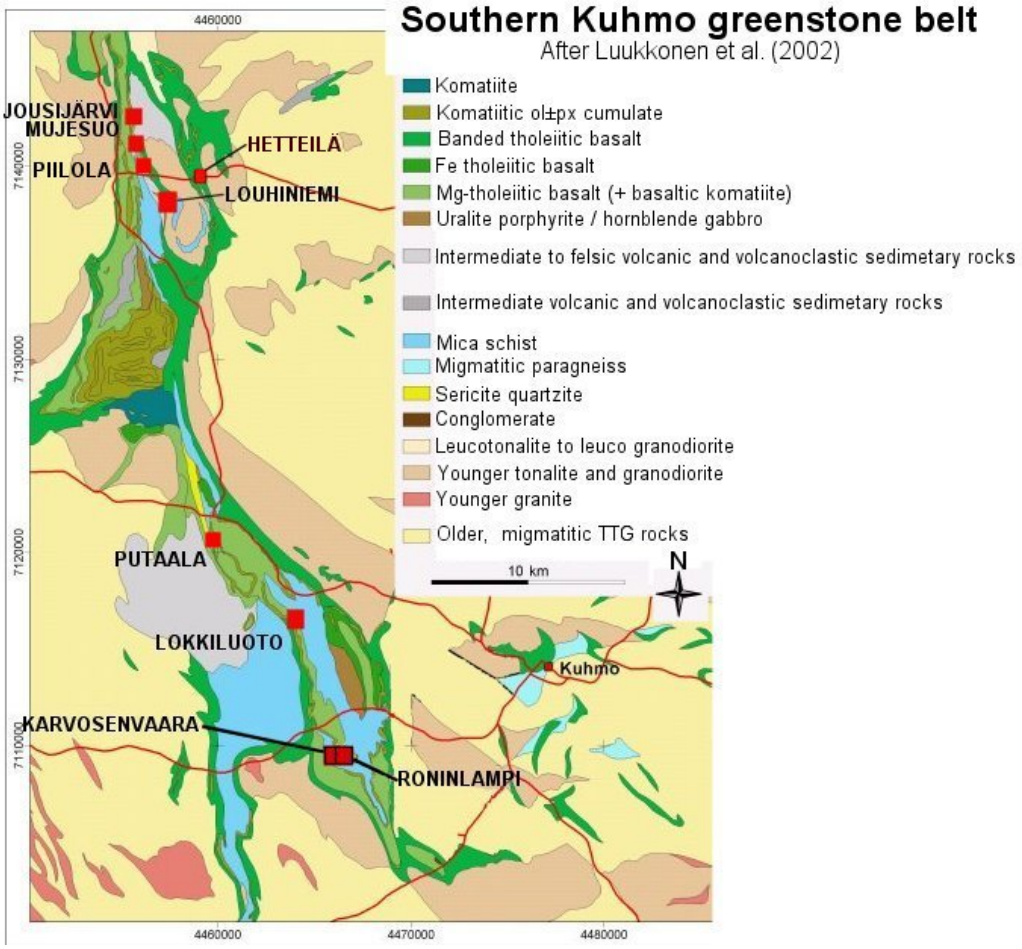
Geological era:	Max age - Minage (Ma):	Inferred age (Ma):	Age of mineralization:
Archean (4000-2500 Ma)	2500-4000		N

Figures

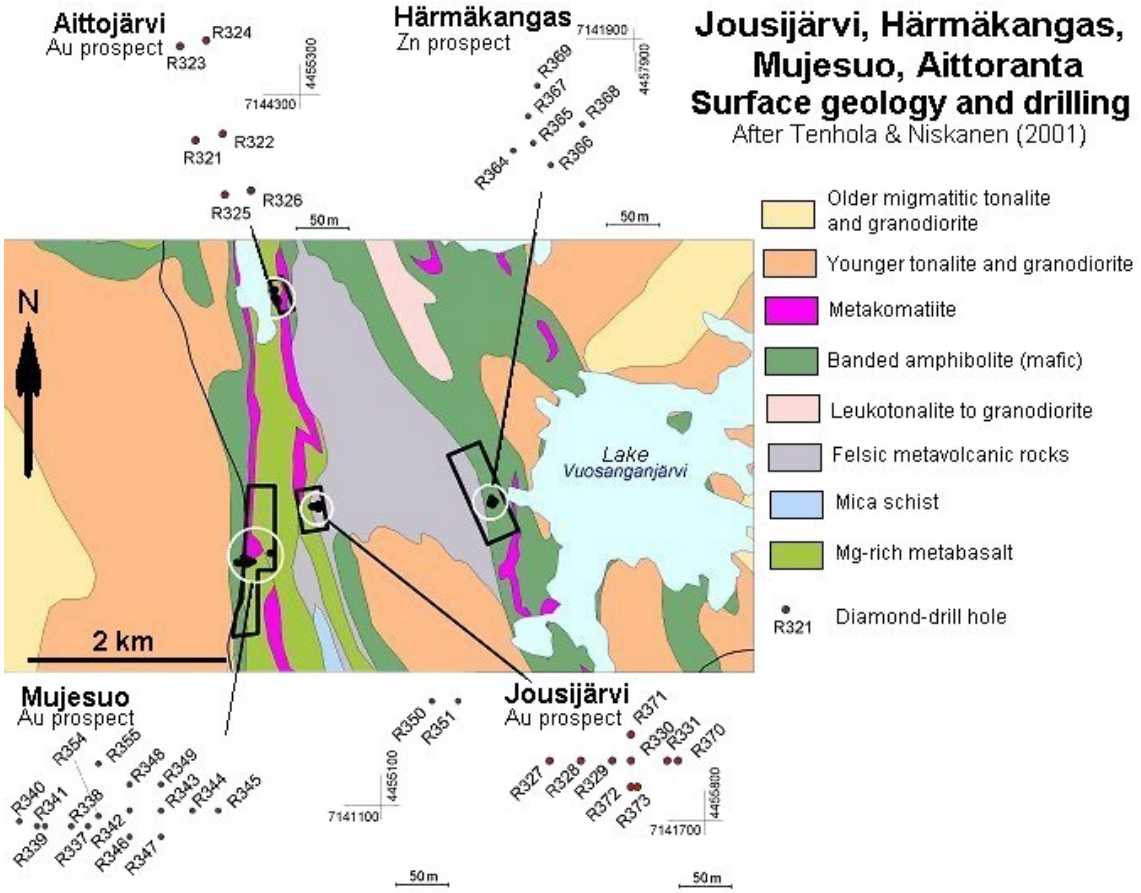
Kuhmo greenstone belt geology and known gold occurrences:



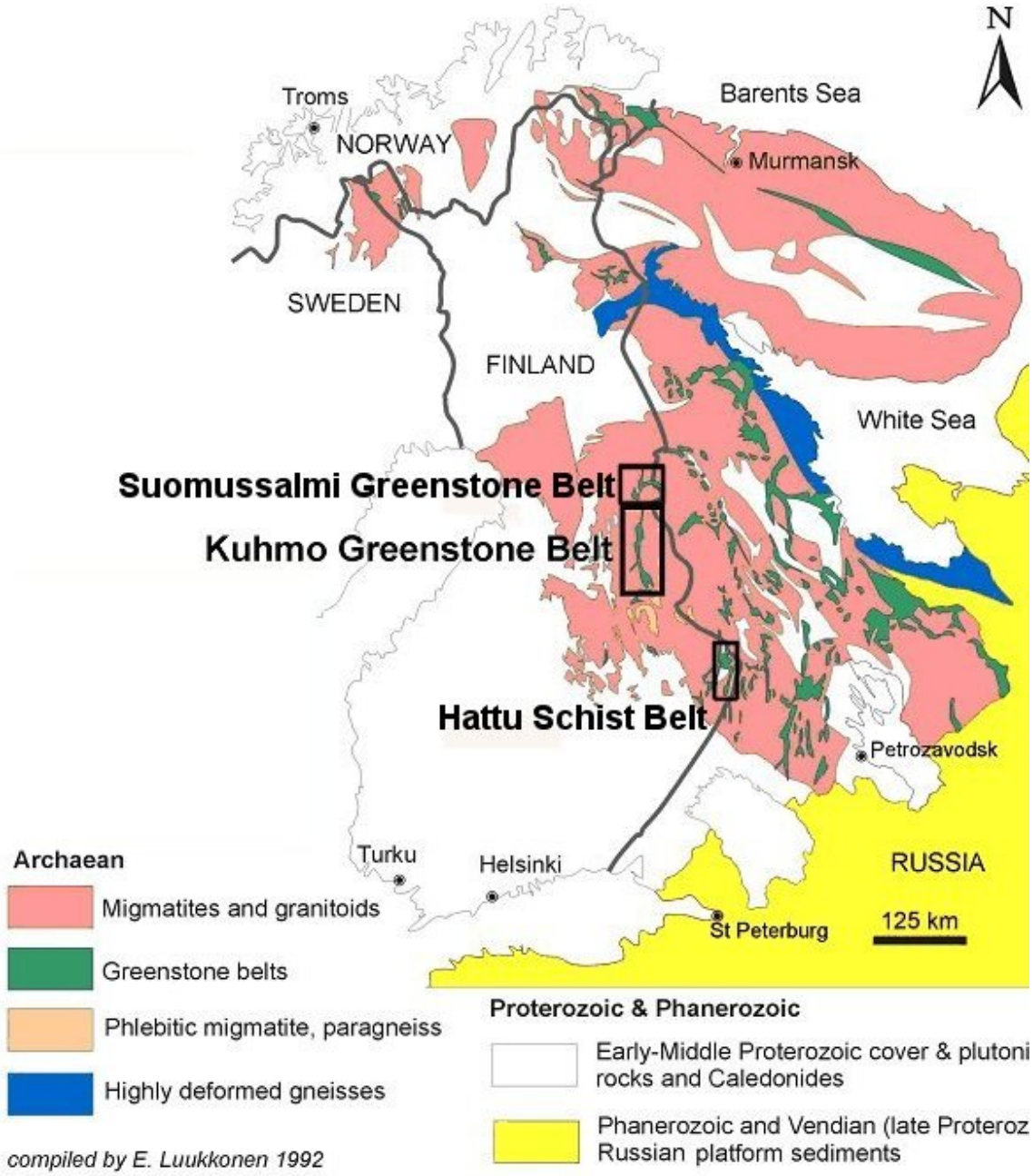
Sothern part of the Kuhmo greenstone belt geology and gold occurrences:



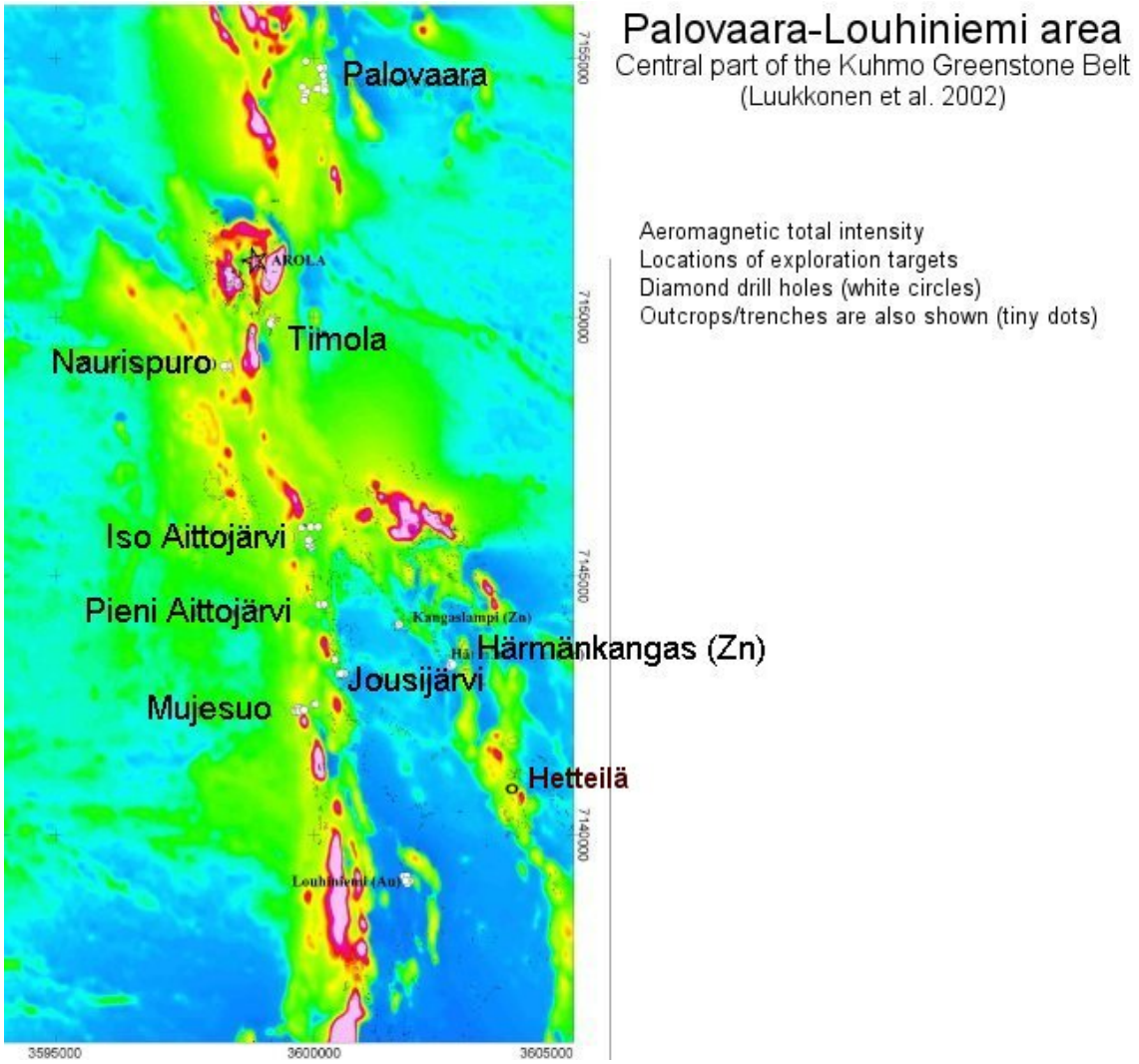
Central Kuhmo greenstone belt geology and gold occurrences:



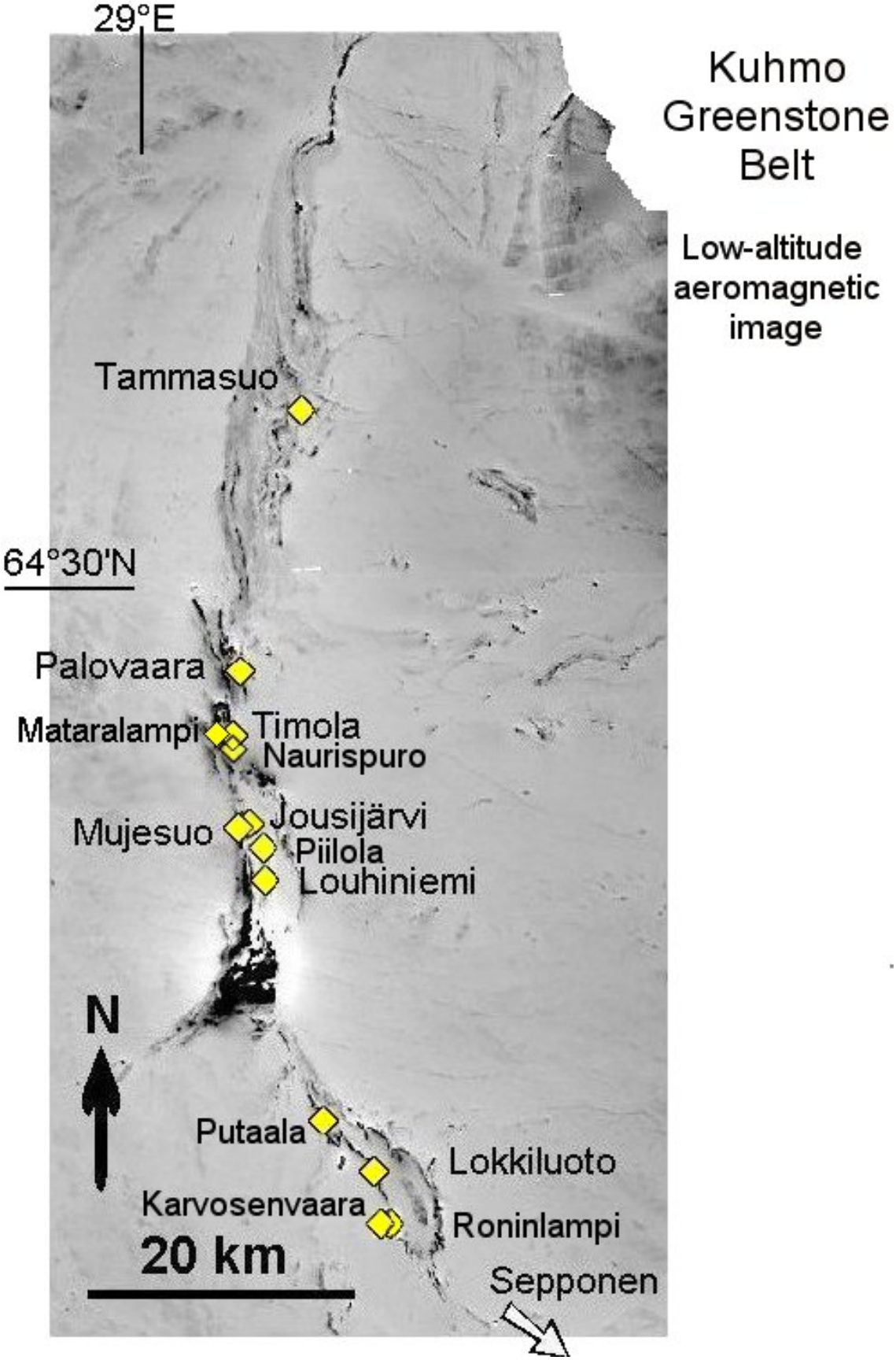
East Finland greenstone belts in the Archaean of Fennoscandia:



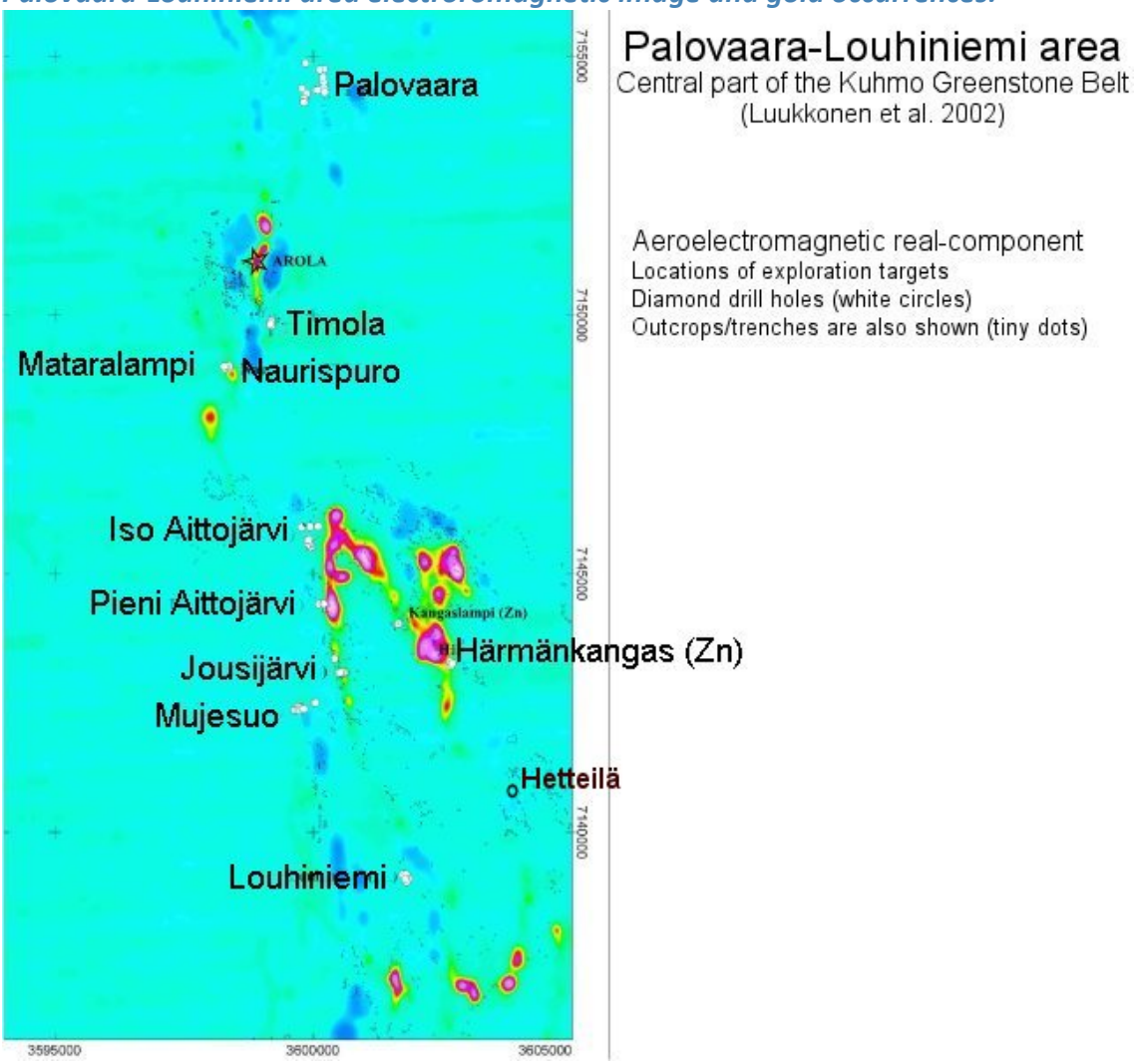
Palovaara-Louhiniemi area aeromagnetic image and gold occurrences:



Kuhmo greenstone belt aeromagnetic image and known gold occurrences:



Palovaara-Louhiniemi area electroromagnetic image and gold occurrences:



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