Lokkiluoto

Occurence type: occurrence

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

Easting EUREF: 609718,363
Northing EUREF: 7114279,765
Easting YKJ: 3609935
Northing YKJ: 7117259

Discovered by: Kajaani Oy
Province: Kuhmo (Ni, Ag, Au)
References: 1, 2, 3, 8, 9

Mineral deposit type

Group: Metallogenic deposit
Main type: Orogenic (metamorphic hydrothermal)
Comments: Orogenic "mesothermal" deposit formed during late-Archaean cratonisation.
References: 7

Dimension

Expression: exposed
Form: discordant
Shape: NA
Length (m): 80
Width (m): 1
Thickness (m): NA
Depth (m): NA
Area (ha): NA
Dip azim: 90
Dip: NA
Plunge azim: NA
Plunge dip: NA
Orientation method: NA
Dimension comments: Open along strike and at depth

Holder history

Previous holders:

Company	Years	Holding type	Comments
Kajaani Oy	NA	NA	NA
Geological Survey of Finland	NA	NA	NA
Sotkamo Silver Oy	2020	Reservation	NA

EXPLORATION ACTIVITY

Geological Survey of Finland

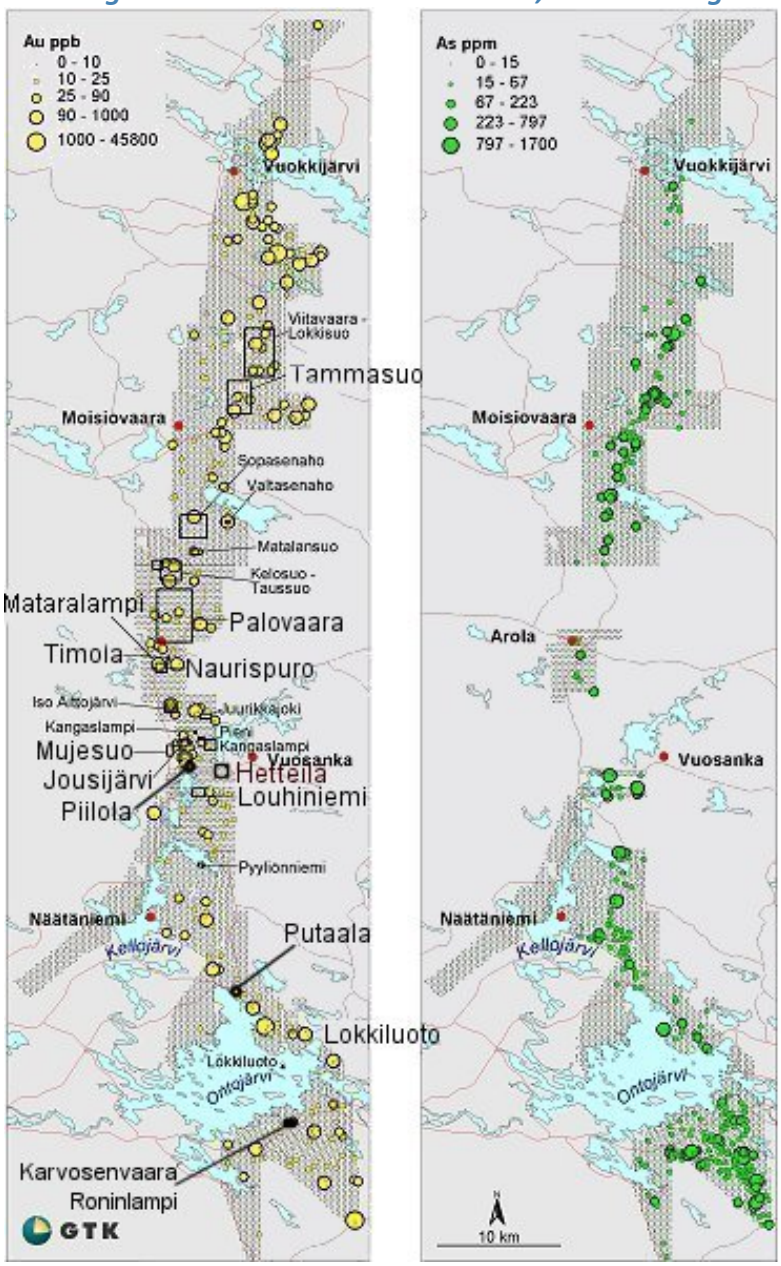
Years	Activity type	Geologist	Exploration result	Ref
1992-1992	core drilling	Timo Heino	mineral occurrences	1
	Core drilling (reconnaissance drilling): 8 diamond-drill holes, total 343 m.			
1990-1998	detailed geology	Timo Heino	key geological features	1, 4
1990-1998	detailed geochemistry	Timo Heino	geochemical anomaly	4
	Au-As anomaly in till			
1990-2001	regional geochemistry	Markku Tenhola	geochemical anomaly	
	Greenstone belt-wide till-geochemical survey with 16 damples per one sq.km			
1990-1998	detailed geophysics	Timo Heino	geophysical anomaly	1, 4
1988-1988	regional geochemistry	Markku Tenhola	geochemical anomaly	
	Country-wide till-geochemical survey			
1987-1987	regional geophysics	Timo Heino	key geological features	1, 4
	Low-altitude airborne magnetic, electromagnetic and radiometric survey			

Kajaani Oy

Years	Activity type	Geologist	Exploration result	Ref
1982-1988	detailed geology	Timo Kopperoinen	key geological features	1
1982-1988	core drilling	Timo Kopperoinen	mineral occurrences	1
	Core drilling (reconnaissance drilling): two diamond-drill holes.			

Figures

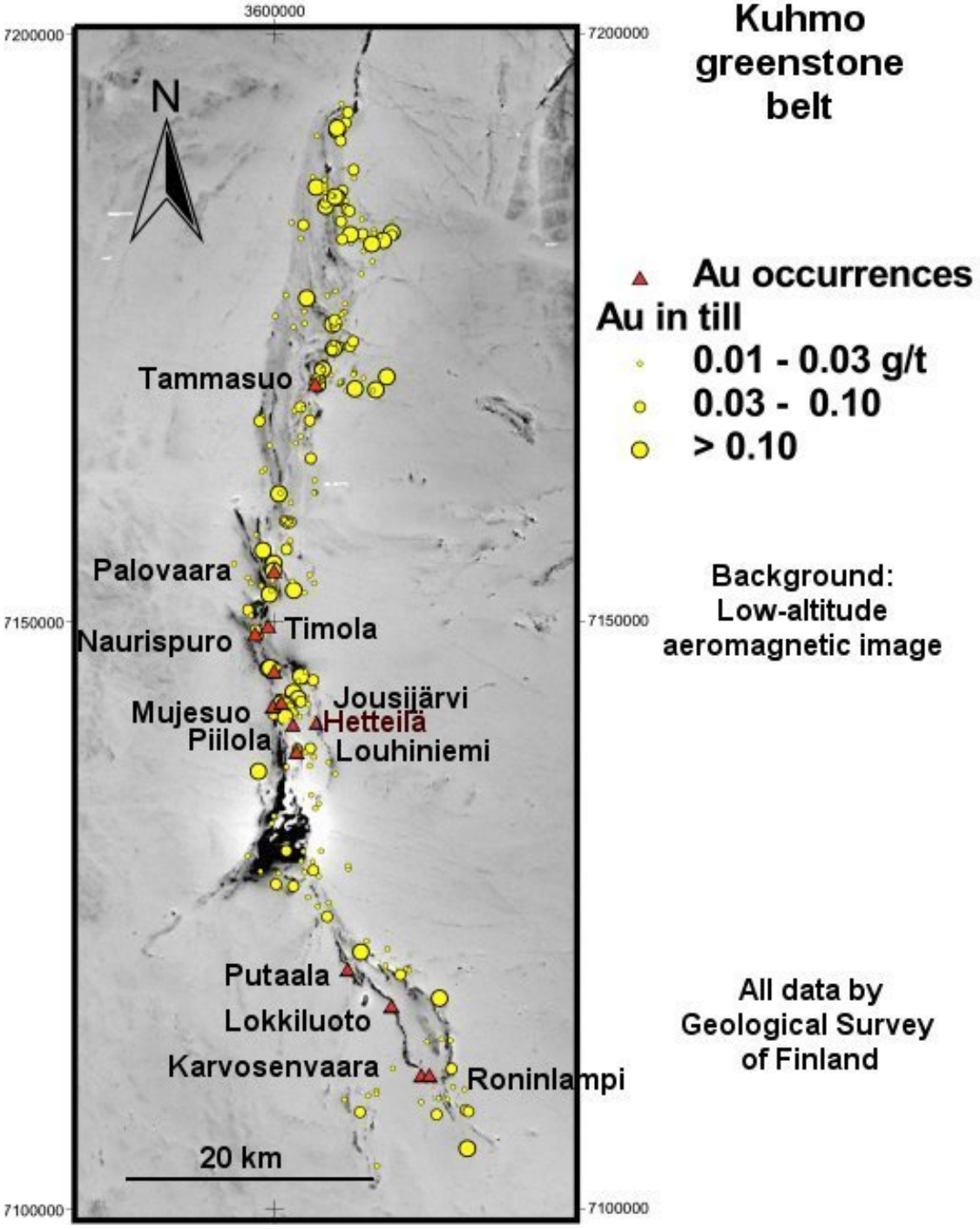
Kuhmo greenstone belt: As and Au in till, and known gold occurrences:



Kuhmo greenstone belt

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

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



GEOLOGY

Host rock: Mafic tuff

Mafic tuff (Host rock)

Rock type: Host rock
Proportion: major
Grain size: NA
Color: NA
References: 1, 4, 6
Comments: The mineralisation is at metatuffite-tonalite contact and in the metatuffite, to the east from the Kuittila tonalite pluton. The deposit is in the contact zone of the mafic to ultramafic-dominated Petäjäniemi Formation and the mica schist-dominated Kokkoniemi Formation

Ore minerals:

Mineral	Proportion	Mineral texture
Arsenopyrite	major	
Chalcopyrite	minor	
Gold	minor	
	Gold as inclusions and in margins of arsenopyrite and chalcopyrite	
Ilmenite	minor	
Molybdenite	minor	
Pyrite	minor	
Pyrrhotite	minor	
Telluride	minor	

Alteration:	Distribution:	Degree:	Relation to mineralization:
sulphidation	Disseminated	Weak	Syn
biotite alteration	Disseminated	NA	Syn

Metamorphic description:

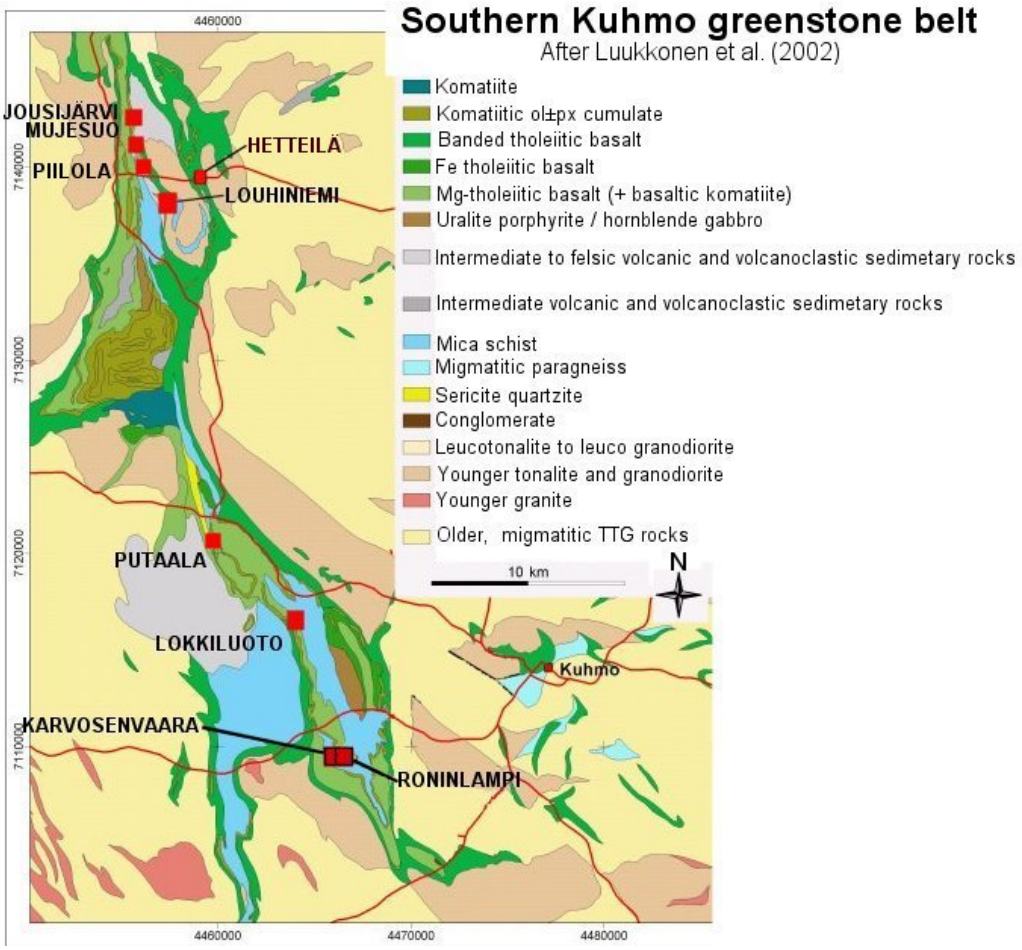
Type:	Facies:	Degree:	Relation to mineralization:	Min P- Max P (kbar)	MIn T- Max T (°C)
Regional	epidote amphibolite metamorphic facies	medium metamorphic grade			
Comments: Regional metamorphic peak probably at the greenschist to amphibolite facies transition.					

Geological age:

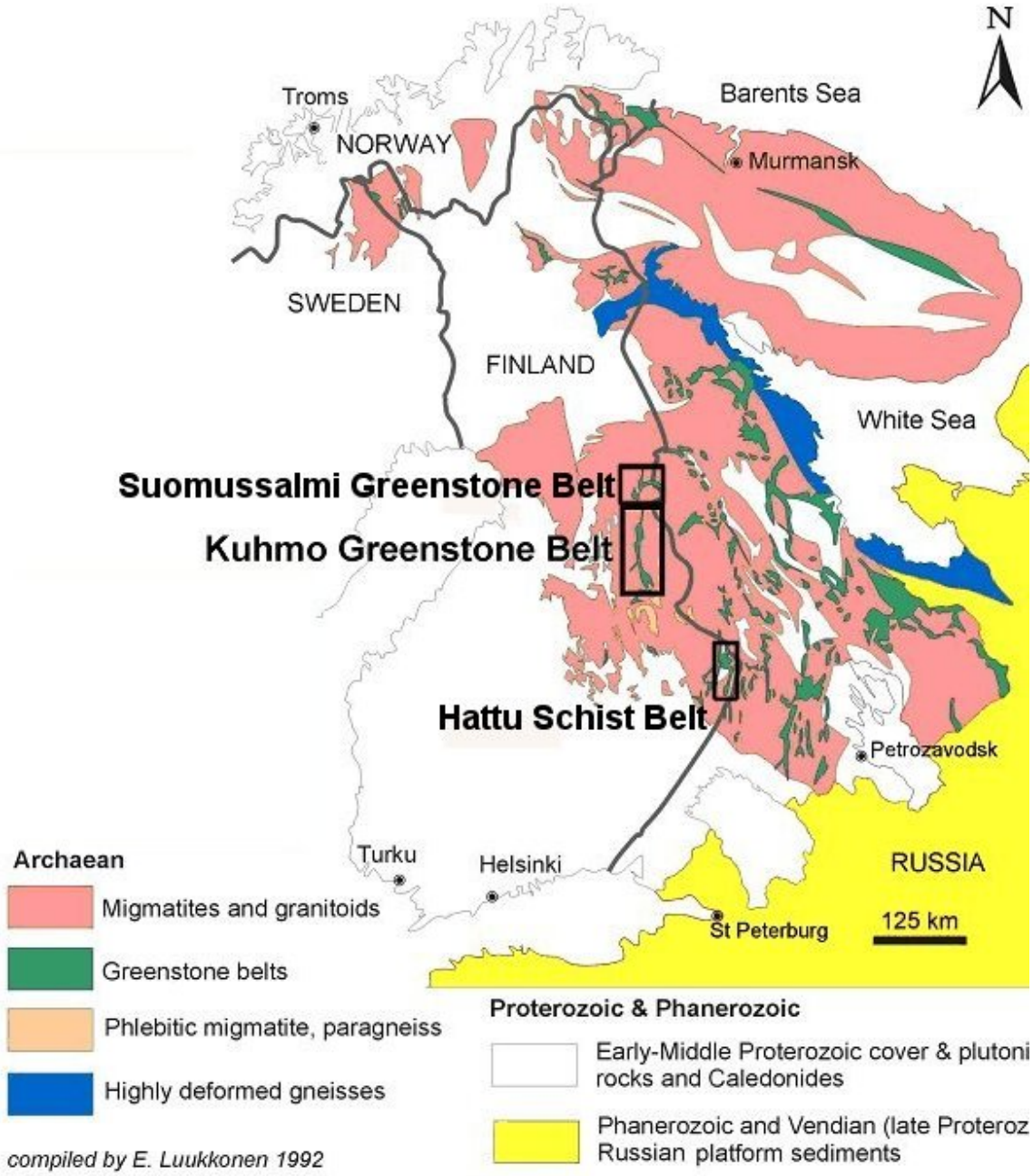
Geological era:	Max age - Minage (Ma):	Inferred age (Ma):	Age of mineralization:
Neoarchean (2800-2500 Ma)	2700-2800		N
Comments: Possibly 2740-2720 Ma (Luukkonen et al. 2002)			

Figures

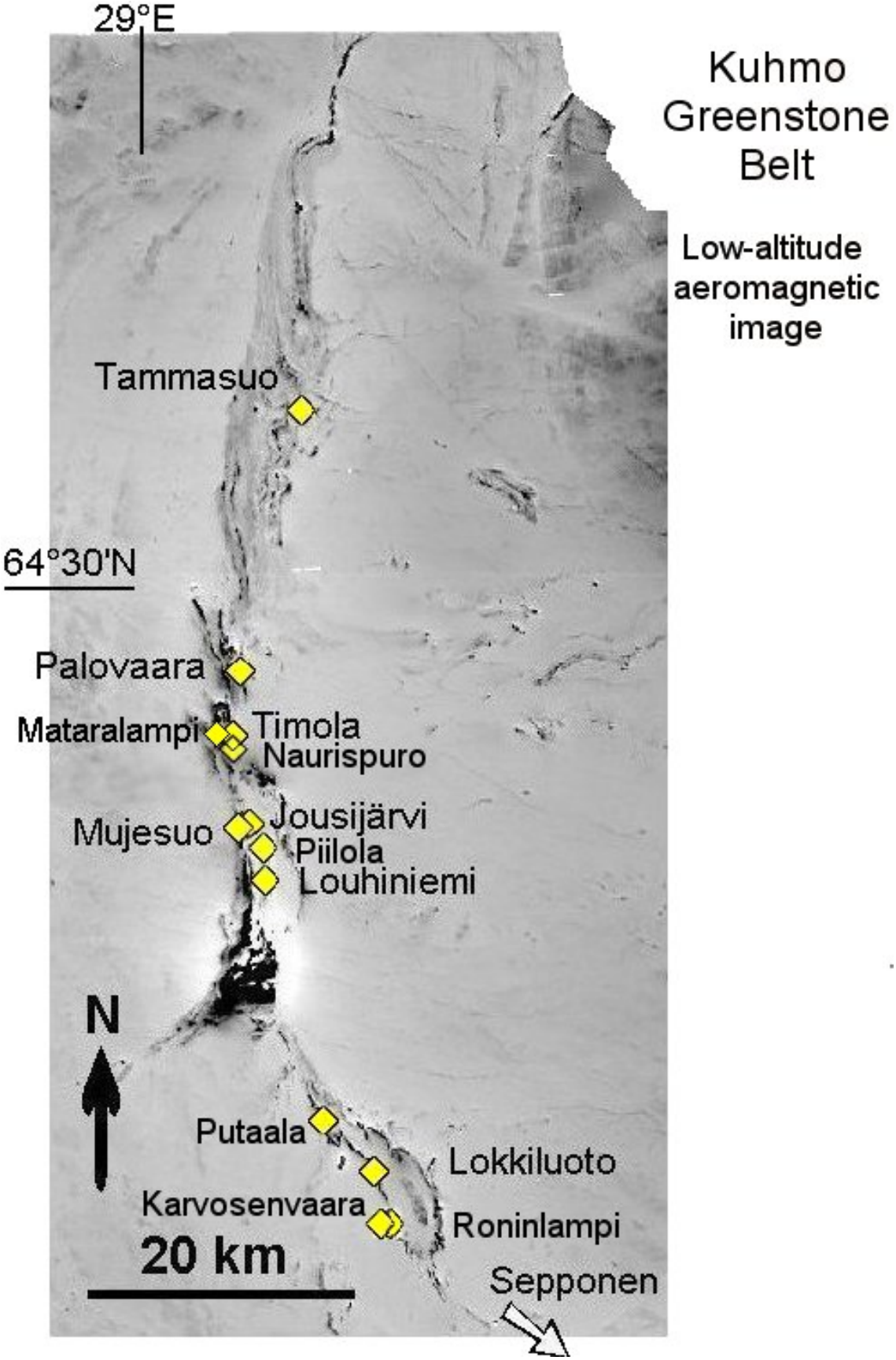
Southern part of the Kuhmo greenstone belt and gold occurrences there:



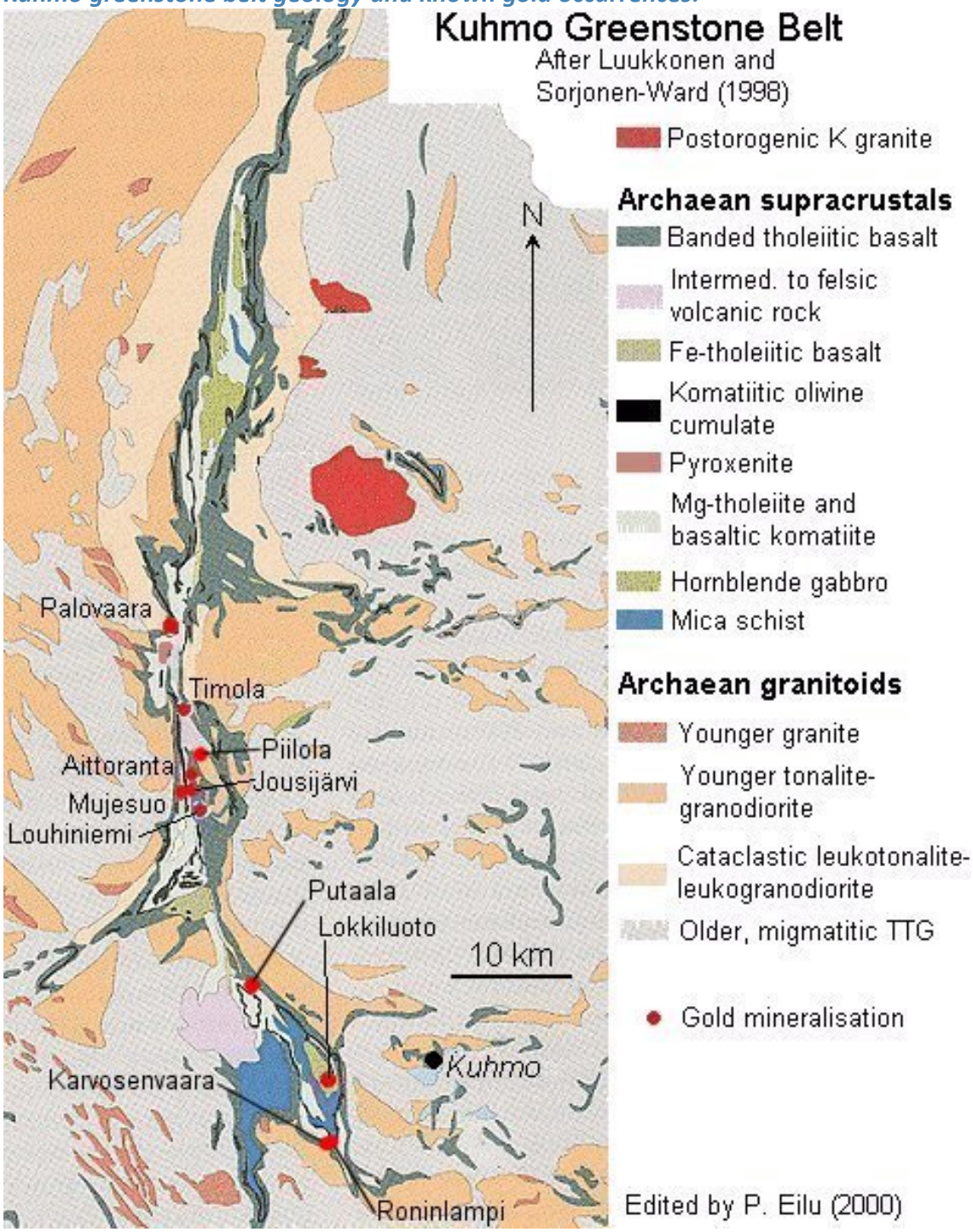
East Finland greenstone belts in the Archaean of Fennoscandia:



Kuhmo greenstone belt aeromagnetic image and known gold occurrences:



Kuhmo greenstone belt geology and known gold occurrences:



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