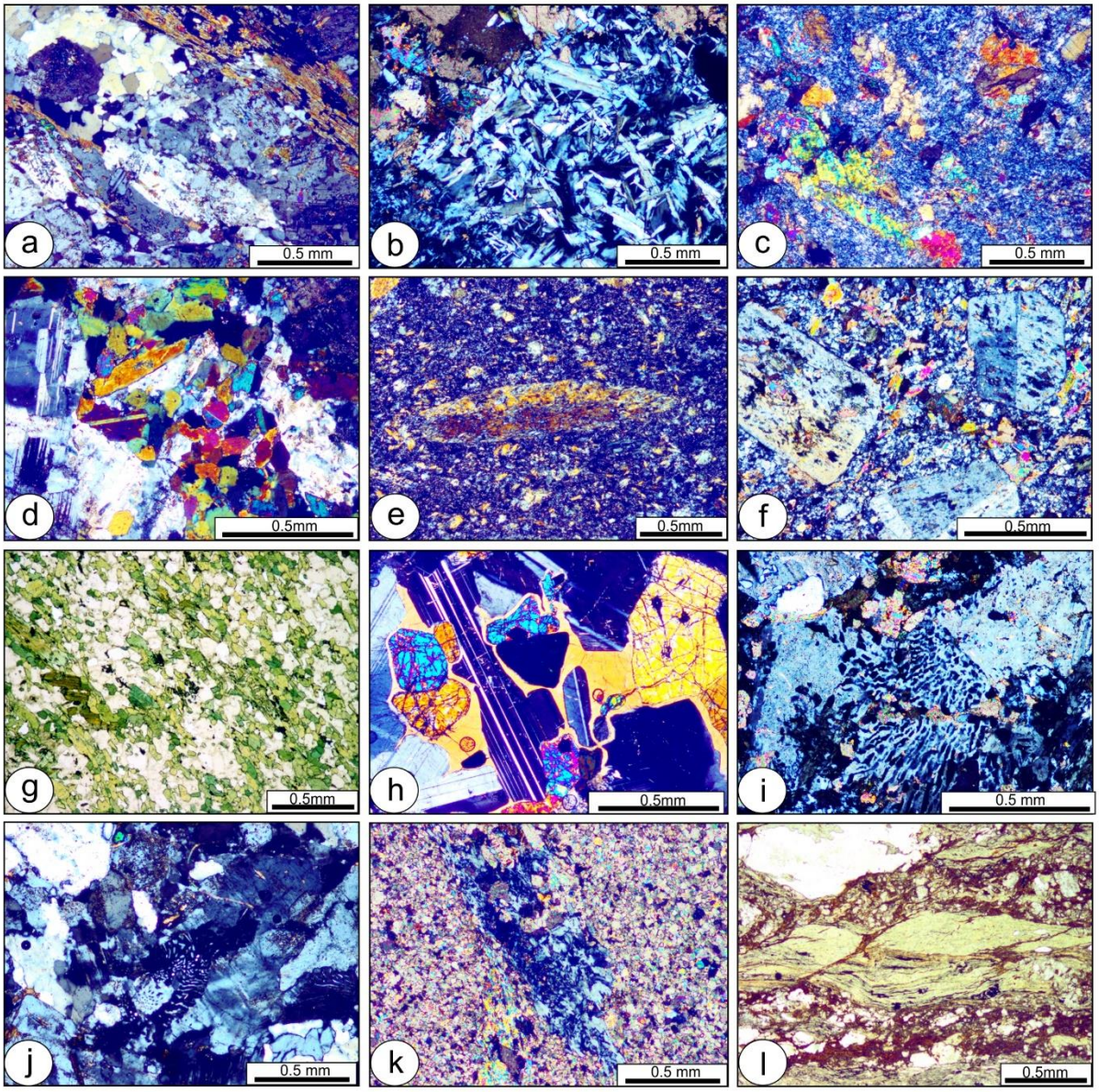

Supplementary Figure S1. Photomicrographs for some selected rocks from Gerf area; (a) Biotite gneiss consists of biotite, quartz and plagioclase, (b) Thin-section views of serpentine minerals and talc carbonates, (c) Serpentinized peridotite composed of serpentine minerals surrounding the orthopyroxene mineral, (d) Ophiolitic metagabbro composed of hornblende and plagioclase, (e) Altered plagioclase phenocryst in the metabasalt, (f) Euhedral plagioclase in the metaandesite, (g) Hornblende schist consists of hornblende, plagioclase and quartz formed, (h) olivine gabbro mainly composed of plagioclase, olivine and pyroxene forming typical ophitic texture, (i) Mozongranite composed mostly of quartz, alkali-feldspar and plagioclase, with subequal amounts of plagioclase and alkali-feldspar, (j) Syenogranite composed mostly of quartz and alkali-feldspar and plagioclase, with plagioclase usually less than alkali-feldspar, (k) Carbonate-chlorite-epidote schist from the alteration zones to the north of G. Gerf, (l) Mylonitic chlorite schist from the alteration zones to the north of G. Korbiai.

Supplementary Table S1: Summarized features of the PALSAR and Sentinel-1B datasets [30].

Radar	PALSAR				Sentinel-1B (S1B)			
AM	Fine Resolution		ScanSAR	Polarimetric	Strip map (SM)	Interferometric wide swath (IW)	Extra wide swath (EW)	Wave (WV)
Beam Mode	FBS, DSN	FBD	WB1, WB2	PLR	S1 to S6	IW1 to IW3	EW1to EW5	WV1&WV2
Center Frequency	L-Band (1.27 GHz)				C-band (5.405 GHz)			
Polarization	SP (HH or VV)	DP (HH + HV or VV + VH)	SP (HH or VV)	DP (HH + HV + VV + VH)	SP (HH or VV) DP (HH+HV and VV+VH)			SP (HH or VV)
Spatial Resolution For S1B: (range x azimuth), m x m	10 m	20 m	100 m	30 m	5x5 m	5x20 m	25x100 m	5x20 m
Swath/band (S1B) Width Km	70 km		250–350 km	30 km	80 km	250 km	4 km	20x20 Km
Off-Nadir Angle	34.3° (default)		27.1° (default)	21.5° (default)	-	-	-	-
Chirp Bandwidth [MHz]	-	-	-	-	87.6-42.2 MHz	56.5-42.8 MHz	22.2-10.4 MHz	74.5 & 48.2 MHz
Incidence Angle (deg)	-	-	-	-	20-43°	30-42°	20-44°	23 & 36.5°

Note: AM= Acquisition mode, DSN = Direct Downlink, FBD = Fine Resolution Mode, PLR = Polarimetry, HH, VV, HV, VH = Polarization types, Single Polarization= SP, Daul Polarization= DP, Degree=deg.