Supplementary data

LITHOSTRATIGRAPHIC GROUP and abbreviations	AGE	FORMATION NAMES	LITHOLOGIES	BRGM map codes	Thickness (m)
Paziols	Oligocene-Miocene		Fluvial conglomerates and sandstones	o	up to 800 (Narbonne)
Carcassonne (CcG)	Late Ypresian-Priabonian	Couches de Fa, Palassou Fm., Couches de Belloc	Alluvial clastics, lacustrine limestone	e3-5	up to 1300
Coustouge (CtG)	Early. Ypresian (Ilerdian)	Grès à nummulites, Marnes à Turritelles, Calcaire nummulitique	Marine clastics, marls and limestones	e3	160-600
Aude Valley AVG)	Campanian-end Paleocene	Begudian, Garumnian	Fluvial, lacustrine, palustrine	c6b, c7, e1, e2	100-400 growth folds
Plantaurel (PtG)	Campanian	Grès d'Alet,	Fluvial, fluvio-deltaic clastics (quartz rich)	c6a	80-200, thins south, thickens west
Grey Flysch (GFG)	Cenomanian-end Santonian	Flysches Gris. Marnes Bleues de Sougraigne, Marnes à Micraster, Fm d'Escudié, Fm de Serre de Lacal, Calcaire de Montferrant, Grès de Labastide	Shallowing up succession of carbonates, marls and clastics, with olistostromes,	c1, c2 c3, c4, c5	0-900
Unconformity	Variable time	-	-		
Black Flysch (BFG)	Albian-Early Cenomanian	Flysches Noires, Grès de Tourrets, Grès de Laval, Marnes du Moulin du Roc, Marnes du Comebe du Bec	Black marls, some sandstones , rare black limestones, olistostromes	n7	> 2000
Pierrelys (PlG)	Aptian	Calcaires urgoniennes superieures, Marnes à exogyres et mésorbitolines	Platform (rudist) carbonates, black shales and marls	n5, n6	Up to 900
Mirande (MG)	Berriasian-Early Aptian	Calcaires urgoniennes inférieures	*local unconformity*		
			Platform (rudist) limestones, marly limestones	n1 to n5	100-400
Unconformity	Late Jurassic to early Cretaceous	Boundary breccias, local bauxites	br	Breccias , 0-150	
Black Dolomite (BDG)	Malm: Kimmerdigian-Tithonian	Dolomies Noires,	Platform carbonates, Dolomites, breccias	j7-9, jD	120-250
	Dogger-Early Malm		Black dolomites, limestones and marls (local basal UC)	j1, j2-6, jD	100-180
	Pliensbachian-Toarcian-Aalenian		Marls, marly limestones, limestones	l6-j0, l5-8	80-420
	Hettangian-Sinemurian		Dolomites, limestones, marls, cargneules	l1-4, l2-4	20-130m
	Rhetian	Rhetien	Dolomites, limestones with detrital quartz, local evaporites (cargneules)	t9, t10, t10-l1	10-15 (rare)

Keuper (KG)	Carnian-Norian	Keuper	Evaporites (cargneules), mudstones, rare dolomites, basalts	t7-9, ts	0- >600
Muschelkalk (Mk)	Anisian-Ladinian	Muschelkalk	Dolomites, marls, limestones	tm	10-25
Buntsandstein (Bt)	Permo-Trias	Grès Rouge	Fluvial sandstones	rt	10

Table 1. Summary of the stratigraphy of the NE Pyrenees (Fig. 2) using the lithostratigraphic groups of Ford et al. (2016) and Rougier et al. (2016) and showing the equivalent units represented on the Quillan, Rivesaltes and Tuchan BRGM geological maps (Bessière et al. 1989; Berger et al. 1993, 1997). Primary data sources are the BRGM (French Geological Survey; Berger et al. 1982, 1993, 1997; Bessière et al. 1989), regional syntheses (Plaziat 1981; Debrand-Passard et al. 1984; Barnolas & Chiron 1996; Beziat et al. 2001; Christophoul et al. 2003) and local studies (e.g. Bilotte 2007; Peybernès et al. 1999; Aragon, 1988) as well as our own mapping.

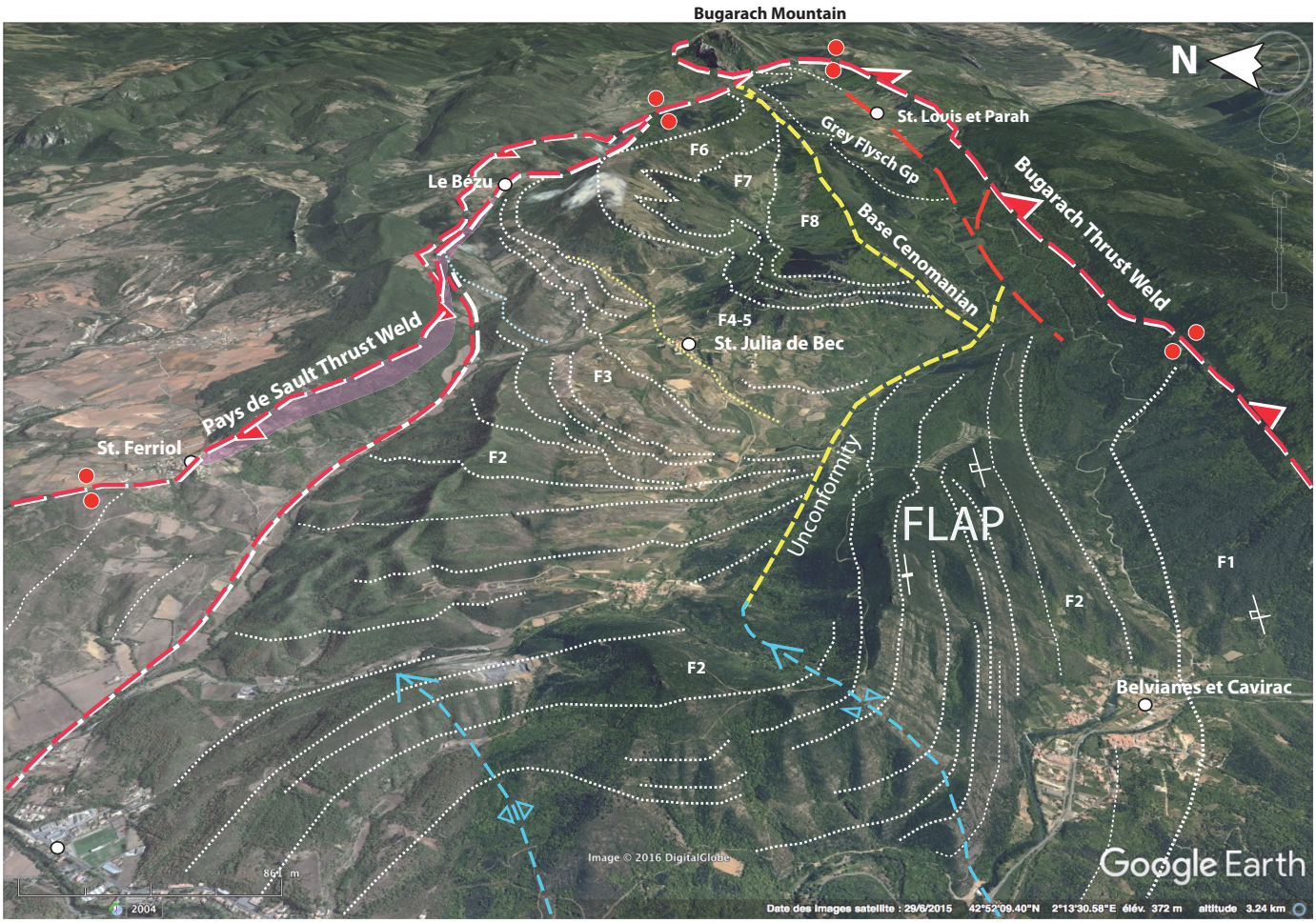

Figure S1 (a) Interpreted Google Earth view of the Quillan syncline/minibasin looking eastward from above the town of Quillan. Fine white dashed lines represent bedding traces, yellow dashed lines are unconformities, blues dashed lines are fold axial traces and red lines are thrusts or thrust welds.

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