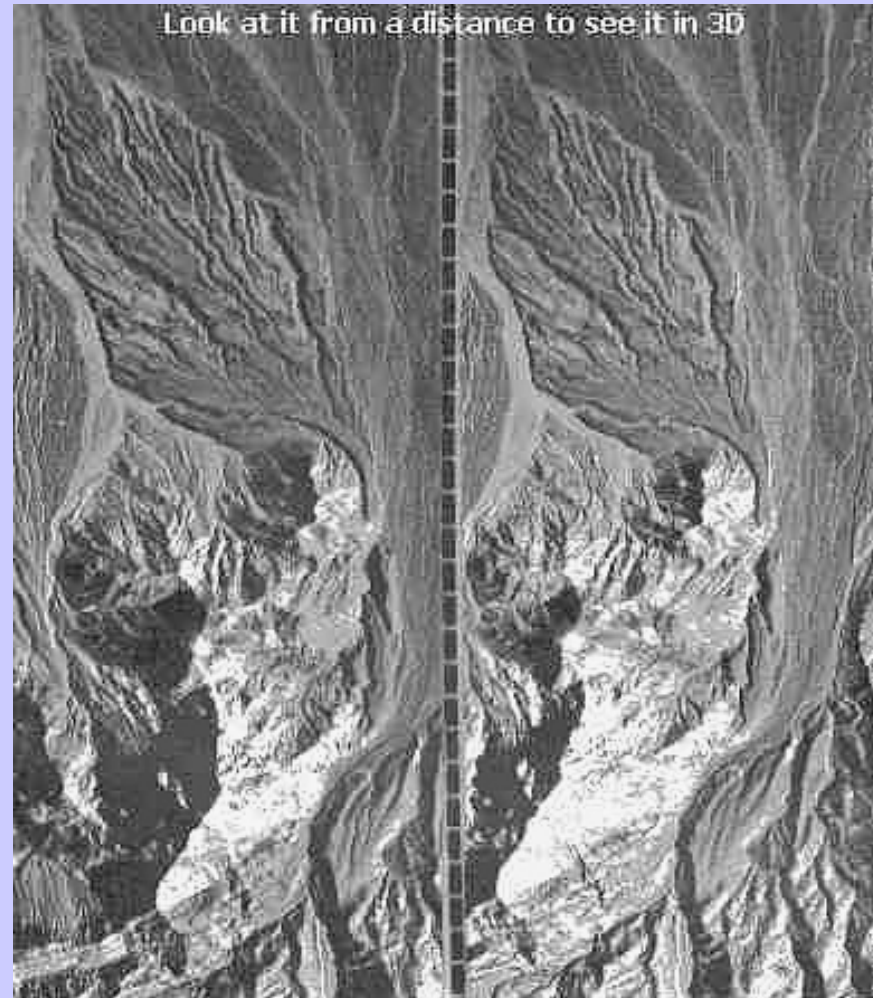
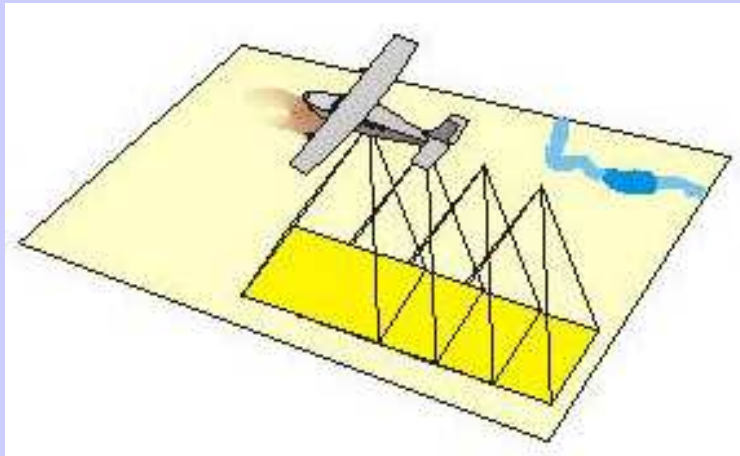


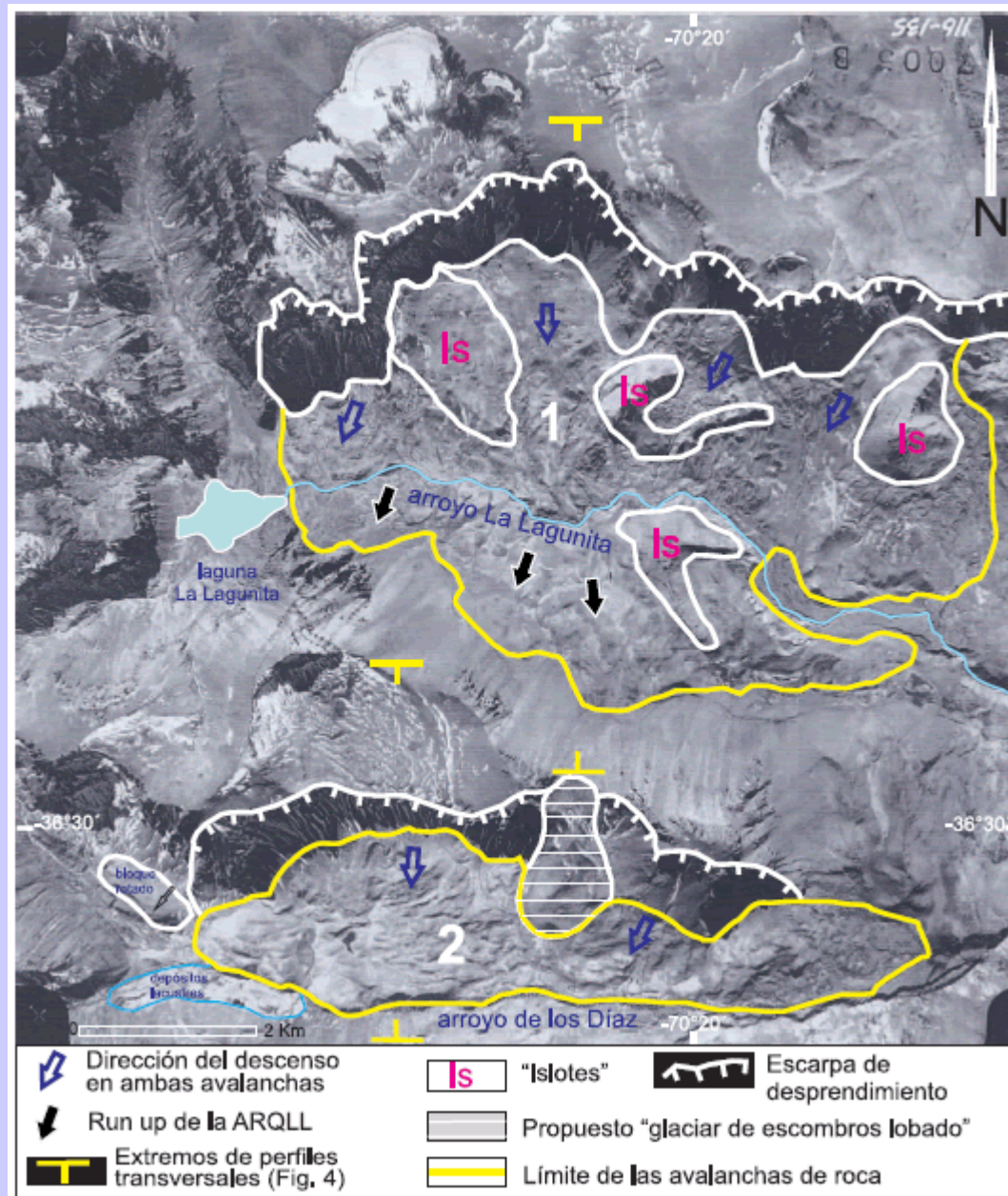
LA FOTOGRAFIA AÈRIA



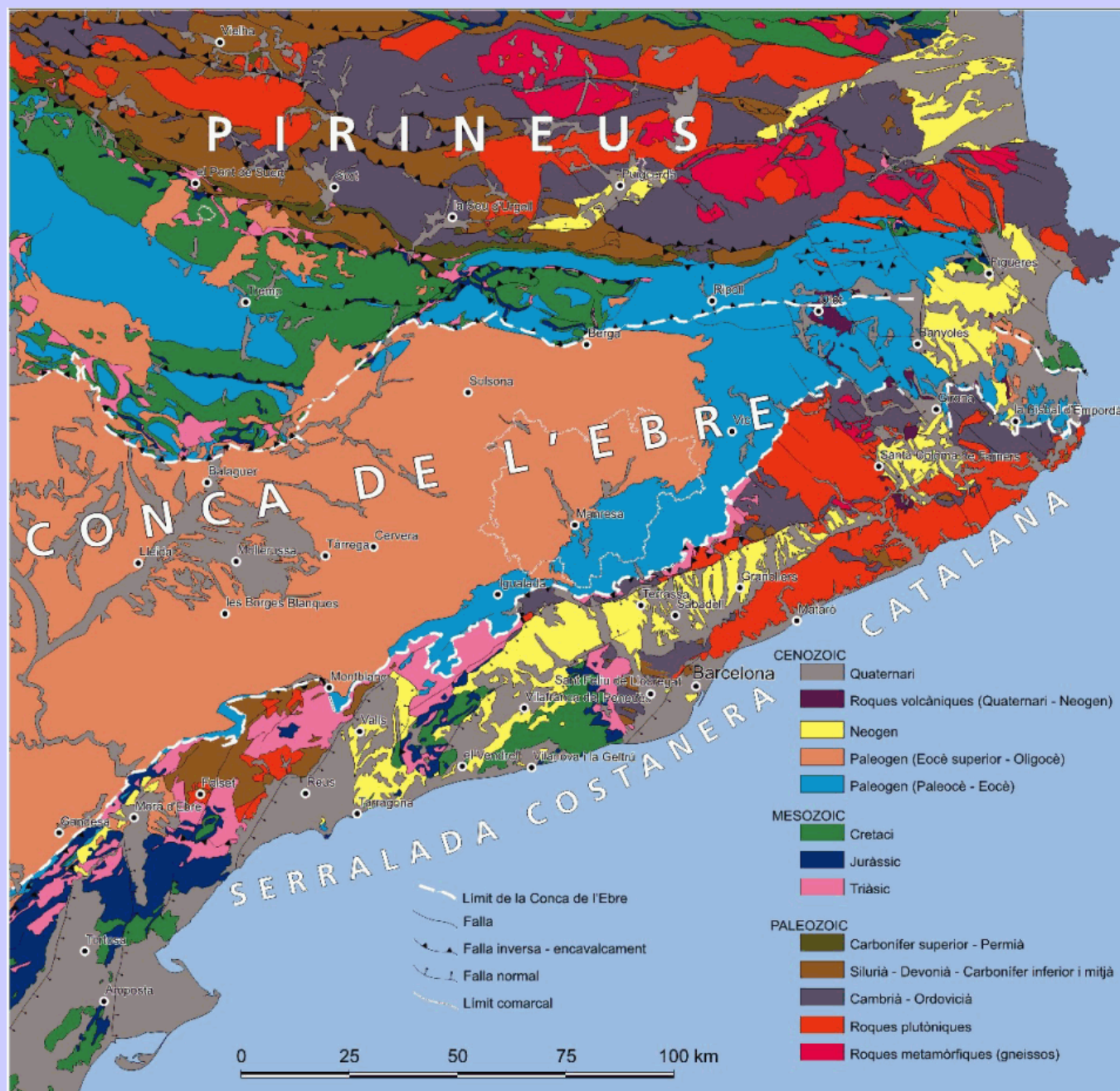
L'ESTEREOSCOP



INTERPRETACIÓ FOTOGEOLÒGICA



MAPA GEOLÒGIC DE CATALUNYA 1:250.000





INTERNATIONAL STRATIGRAPHIC CHART

International Commission on Stratigraphy



eonothem Eon	erathem Era	system Period	series Epoch	stage Age	Age Ma	GSSP
Phanerozoic	Cenozoic	Quaternary*	Holocene		0.0118	
				Upper	0.126	
			Pleistocene	Middle	0.781	
				Lower	1.806	
Phanerozoic	Cenozoic	Neogene	Gelasian		2.588	
			Pliocene	Piacenzian	3.600	
				Zanclean	5.332	
				Messinian	7.246	
Phanerozoic	Cenozoic	Neogene	Tortonian		11.608	
				Serravalian	13.66	
				Langhian	15.97	
				Burdigalian	20.43	
Phanerozoic	Cenozoic	Neogene	Aquitanian		23.03	
				Chattian	28.4 ± 0.1	
				Rupelian	33.9 ± 0.1	
				Prabonian	37.2 ± 0.1	
Phanerozoic	Cenozoic	Neogene	Bartonian		40.4 ± 0.2	
				Lutetian	48.6 ± 0.2	
				Ypresian	55.8 ± 0.2	
				Thanetian	58.7 ± 0.2	
Phanerozoic	Cenozoic	Neogene	Selandian		61.7 ± 0.2	
				Danian	65.5 ± 0.3	
				Maastrichtian	70.6 ± 0.6	
				Campanian	83.5 ± 0.7	
Phanerozoic	Cenozoic	Neogene	Santonian		85.8 ± 0.7	
				Coniacian	89.3 ± 1.0	
				Turonian	93.5 ± 0.8	
				Cenomanian	99.6 ± 0.9	
Phanerozoic	Cenozoic	Neogene	Albian		112.0 ± 1.0	
				Aptian	125.0 ± 1.0	
				Barremian	130.0 ± 1.5	
				Hauterivian	136.4 ± 2.0	
Phanerozoic	Cenozoic	Neogene	Visean		140.2 ± 3.0	
				Sinemurian	145.5 ± 4.0	

* proposed by ICS

eonothem Eon	erathem Era	system Period	series Epoch	stage Age	Age Ma	GSSP
Phanerozoic	Mesozoic	Jurassic	Tithonian		145.5 ± 4.0	
				Upper	150.8 ± 4.0	
				Kimmeridgian	155.7 ± 4.0	
				Oxfordian	161.2 ± 4.0	
Phanerozoic	Mesozoic	Jurassic	Callovian		164.7 ± 4.0	
				Bathonian	167.7 ± 3.5	
				Bajocian	171.6 ± 3.0	
				Aalenian	175.6 ± 2.0	
Phanerozoic	Mesozoic	Jurassic	Toarcian		183.0 ± 1.5	
				Plensbachian	189.6 ± 1.5	
				Sinemurian	196.5 ± 1.0	
				Hettangian	199.6 ± 0.6	
Phanerozoic	Mesozoic	Triassic	Rhaetian		203.6 ± 1.5	
				Nonian	216.5 ± 2.0	
				Camian	228.0 ± 2.0	
				Ladinian	237.0 ± 2.0	
Phanerozoic	Mesozoic	Triassic	Anisian		245.0 ± 1.5	
				Olenekian	249.7 ± 0.7	
				Induan	251.0 ± 0.4	
				Changhsingian	253.8 ± 0.7	
Phanerozoic	Mesozoic	Triassic	Wuchiapingian		260.4 ± 0.7	
				Capitanian	265.8 ± 0.7	
				Wordian	268.0 ± 0.7	
				Roadian	270.6 ± 0.7	
Phanerozoic	Mesozoic	Triassic	Kungurian		275.6 ± 0.7	
				Artinskian	284.4 ± 0.7	
				Sakmarian	294.6 ± 0.8	
				Asselian	299.0 ± 0.8	
Phanerozoic	Mesozoic	Triassic	Gzhelian		303.9 ± 0.9	
				Kasimovian	306.5 ± 1.0	
				Moscovian	311.7 ± 1.1	
				Bashkirian	318.1 ± 1.3	
Phanerozoic	Mesozoic	Triassic	Serpukhovian		326.4 ± 1.6	
				Visean	345.3 ± 2.1	
				Tournaisian	359.2 ± 2.6	

eonothem Eon	erathem Era	system Period	series Epoch	stage Age	Age Ma	GSSP
Phanerozoic	Paleozoic	Devonian	Famennian		359.2 ± 2.5	
				Upper	374.5 ± 2.6	
				Frasnian	385.3 ± 2.6	
				Givetian	391.8 ± 2.7	
Phanerozoic	Paleozoic	Devonian	Echian		397.5 ± 2.7	
				Emasian	407.0 ± 2.8	
				Pragian	411.2 ± 2.8	
				Lochkovian	416.0 ± 2.8	
Phanerozoic	Paleozoic	Silurian	Pridoli		418.7 ± 2.7	
				Ludfordian	421.3 ± 2.6	
				Gorstian	422.9 ± 2.5	
				Homerian	426.2 ± 2.4	
Phanerozoic	Paleozoic	Silurian	Sheinwoodian		428.2 ± 2.3	
				Telychian	436.0 ± 1.9	
				Aeronian	439.0 ± 1.8	
				Rhuddanian	443.7 ± 1.5	
Phanerozoic	Paleozoic	Silurian	Hirnantian		445.6 ± 1.5	
				Stage 6	455.8 ± 1.6	
				Stage 5	460.9 ± 1.6	
				Darriwilian	468.1 ± 1.6	
Phanerozoic	Paleozoic	Silurian	Stage 3		471.8 ± 1.6	
				Stage 2	478.6 ± 1.7	
				Tremadocian	488.3 ± 1.7	
Phanerozoic	Paleozoic	Silurian	Stage 10		501.0 ± 2.0	
				Stage 9		
				Paibian		
Phanerozoic	Paleozoic	Silurian	Stage 7			
				Stage 6		
				Stage 5		
Phanerozoic	Paleozoic	Silurian	Stage 4			
				Stage 3		
				Stage 2		
				Stage 1		

This chart was drafted by Gabi Ogg.

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eonothem Eon	erathem Era	system Period	Age Ma	GSSP
Phanerozoic	Proterozoic	Ediacaran	542	
		Neoproterozoic	~630	
Phanerozoic	Proterozoic	Cryogenian	850	
		Tonian	1000	
Phanerozoic	Proterozoic	Stenian	1200	
		Ectasian	1400	
Phanerozoic	Proterozoic	Calymnian	1600	
		Statherian	1800	
Phanerozoic	Proterozoic	Chonistian	2050	
		Rhyacian	2300	
Phanerozoic	Proterozoic	Siderian	2500	
		Neoproterozoic	2800	
Phanerozoic	Proterozoic	Mesoproterozoic	3200	
		Paleoproterozoic	3600	
Phanerozoic	Proterozoic	Lower limit is not defined		

Subdivisions of the global geologic record are formally defined by their lower boundary. Each unit of the Phanerozoic (~542 Ma to Present) and the base of Ediacaran are defined by a basal Global Standard Section and Point (GSSP), whereas Precambrian units are formally subdivided by absolute age (Global Standard Stratigraphic Age, GSSA). Details of each GSSP are posted on the ICS website (www.stratigraphy.org).

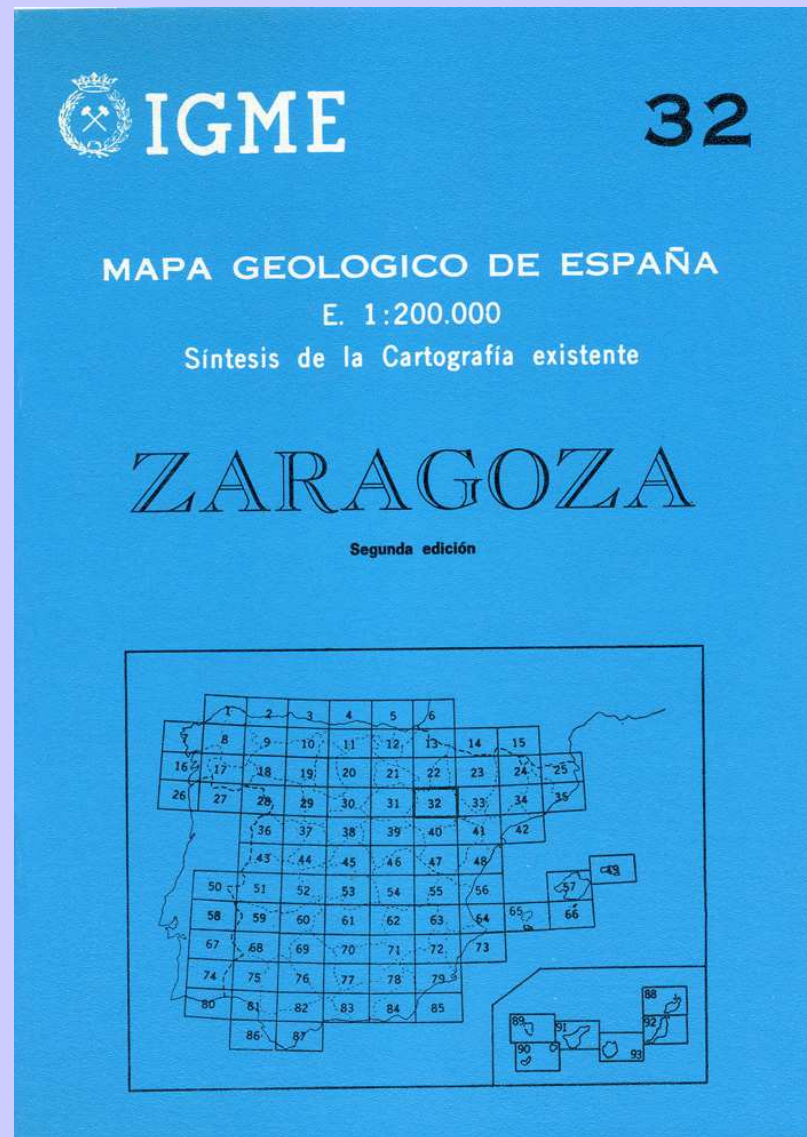
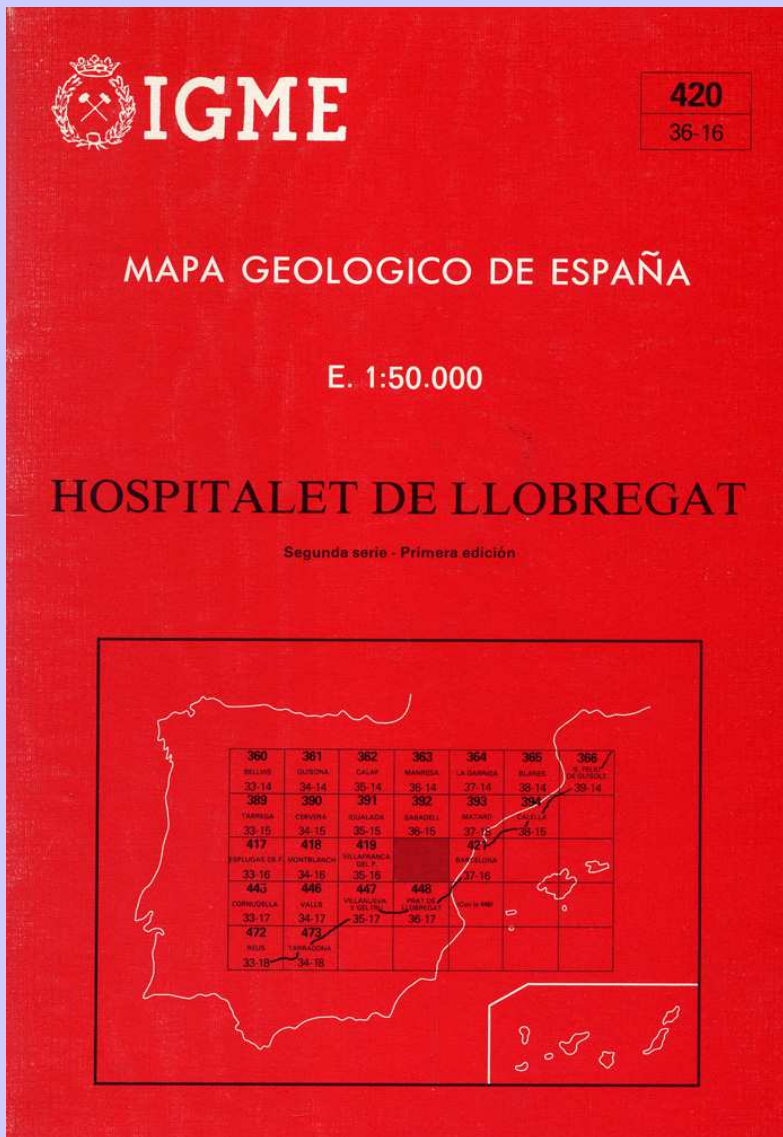
International chronostratigraphic units, rank, names and formal status are approved by the International Commission on Stratigraphy (ICS) and ratified by the International Union of Geological Sciences (IUGS).

Numerical ages of the unit boundaries in the Phanerozoic are subject to revision. Some stages within the Ordovician and Cambrian will be formally named upon international agreement on their GSSP limits. Most sub-Series boundaries (e.g., Middle and Upper Aptian) are not formally defined.

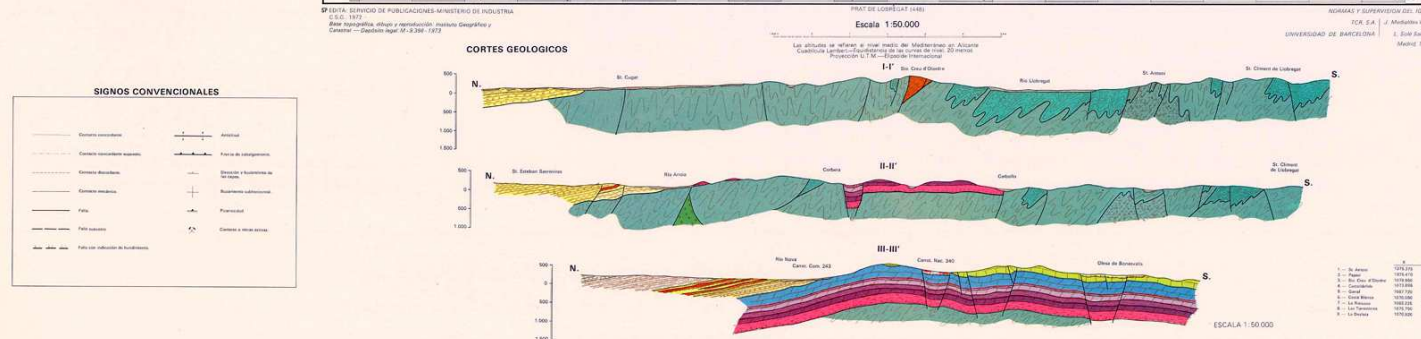
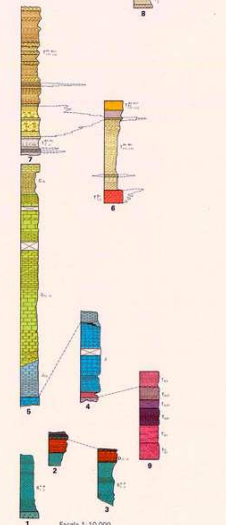
Colors are according to the Commission for the Geological Map of the World (www.cgmw.org).

The listed numerical ages are from 'A Geologic Time Scale 2004', by F.M. Gradstein, J.G. Ogg, A.G. Smith, et al. (2004, Cambridge University Press).

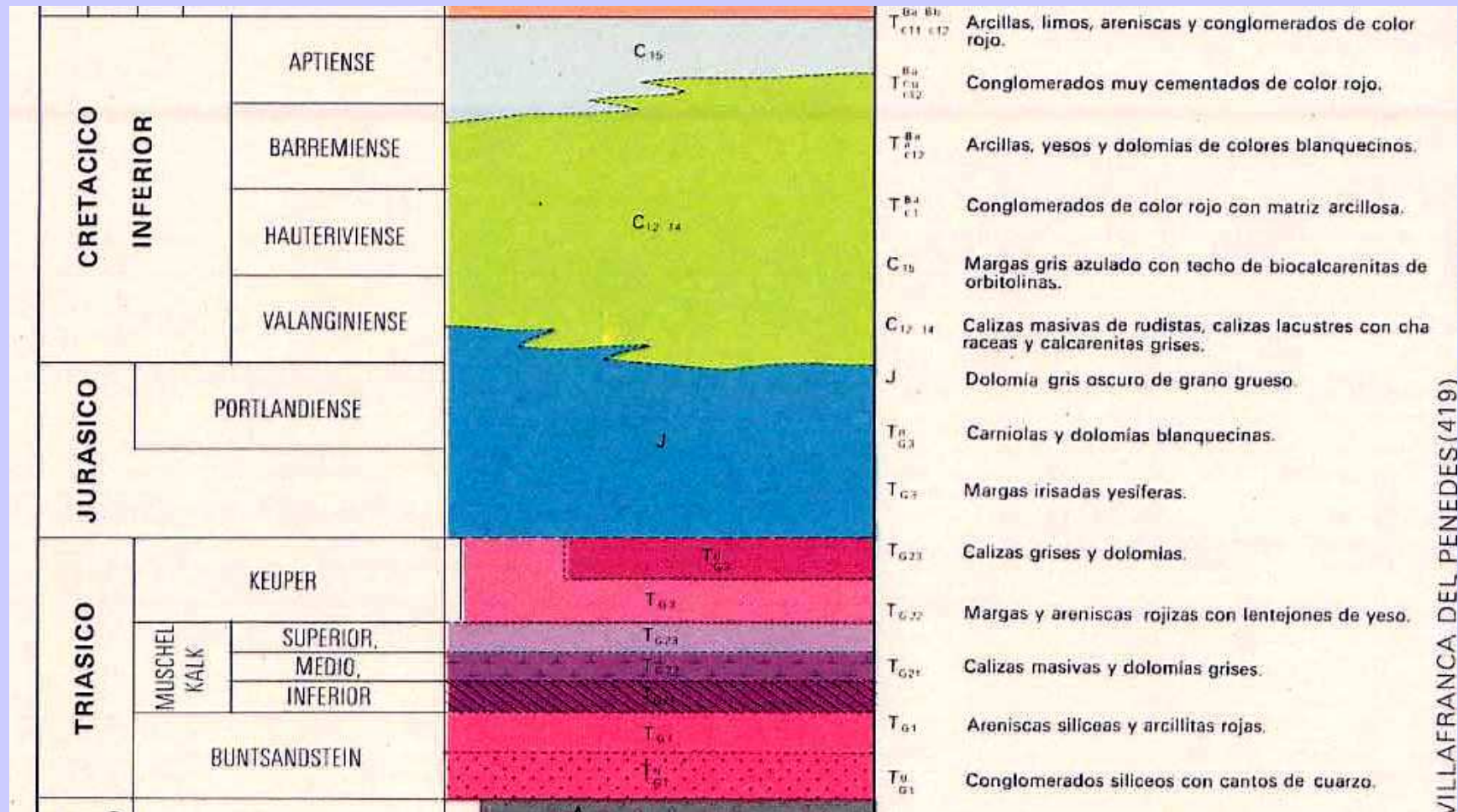
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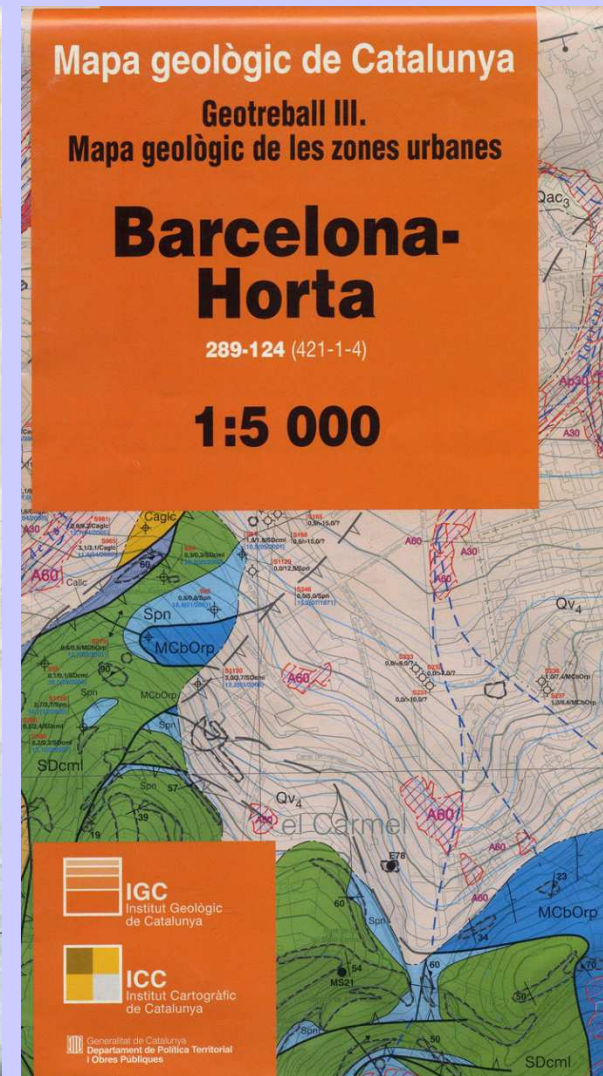
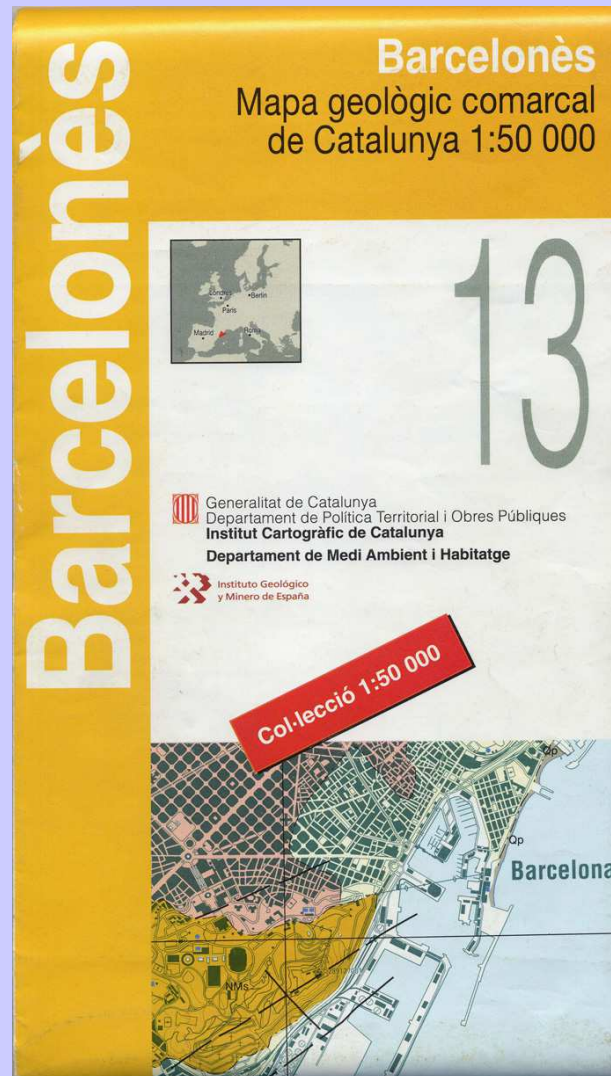
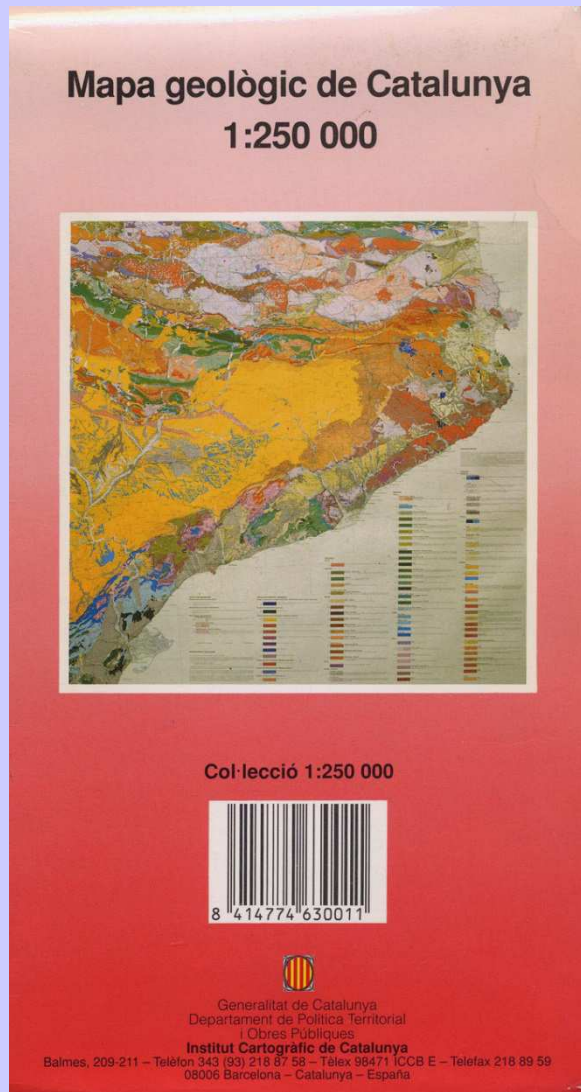
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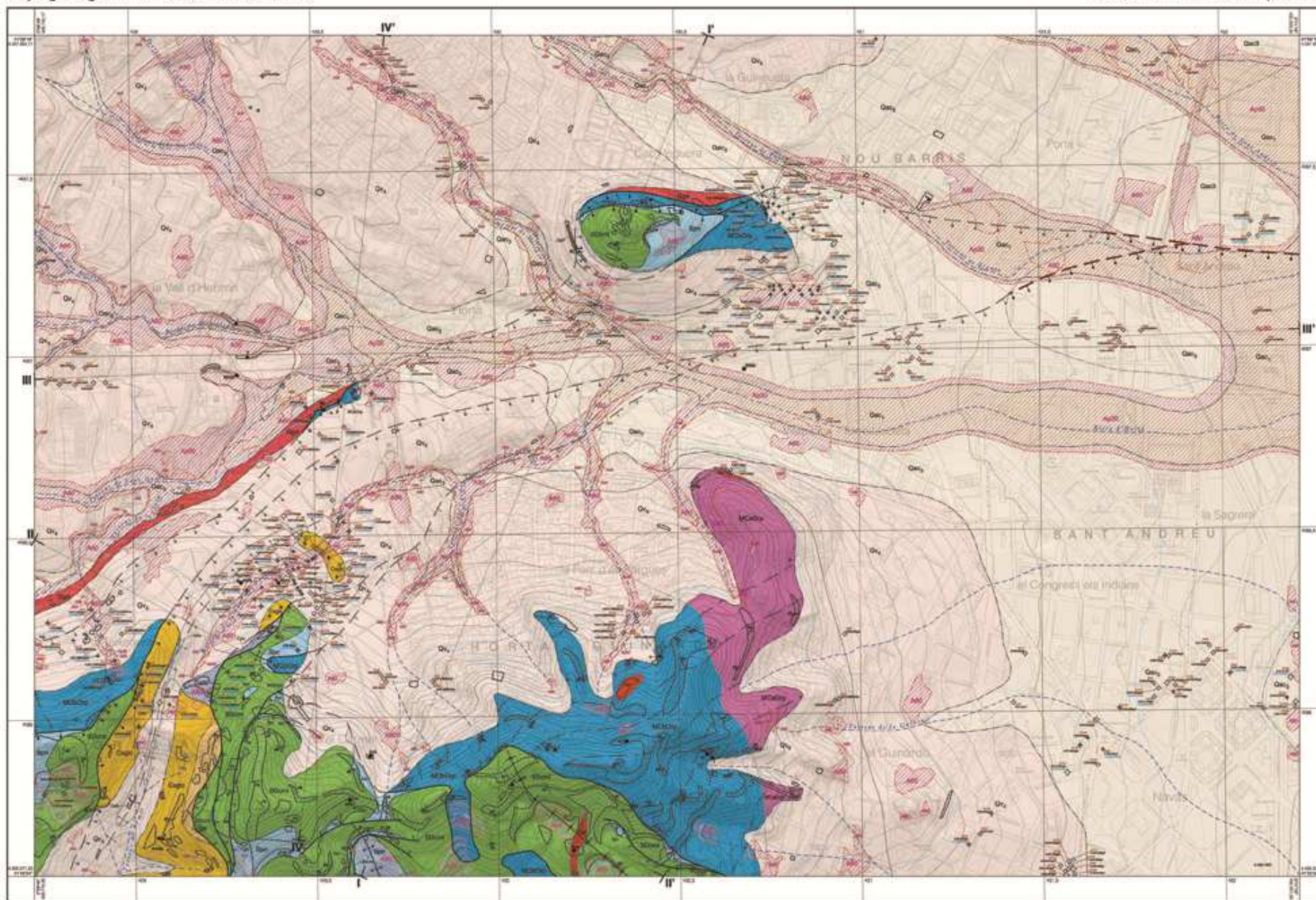
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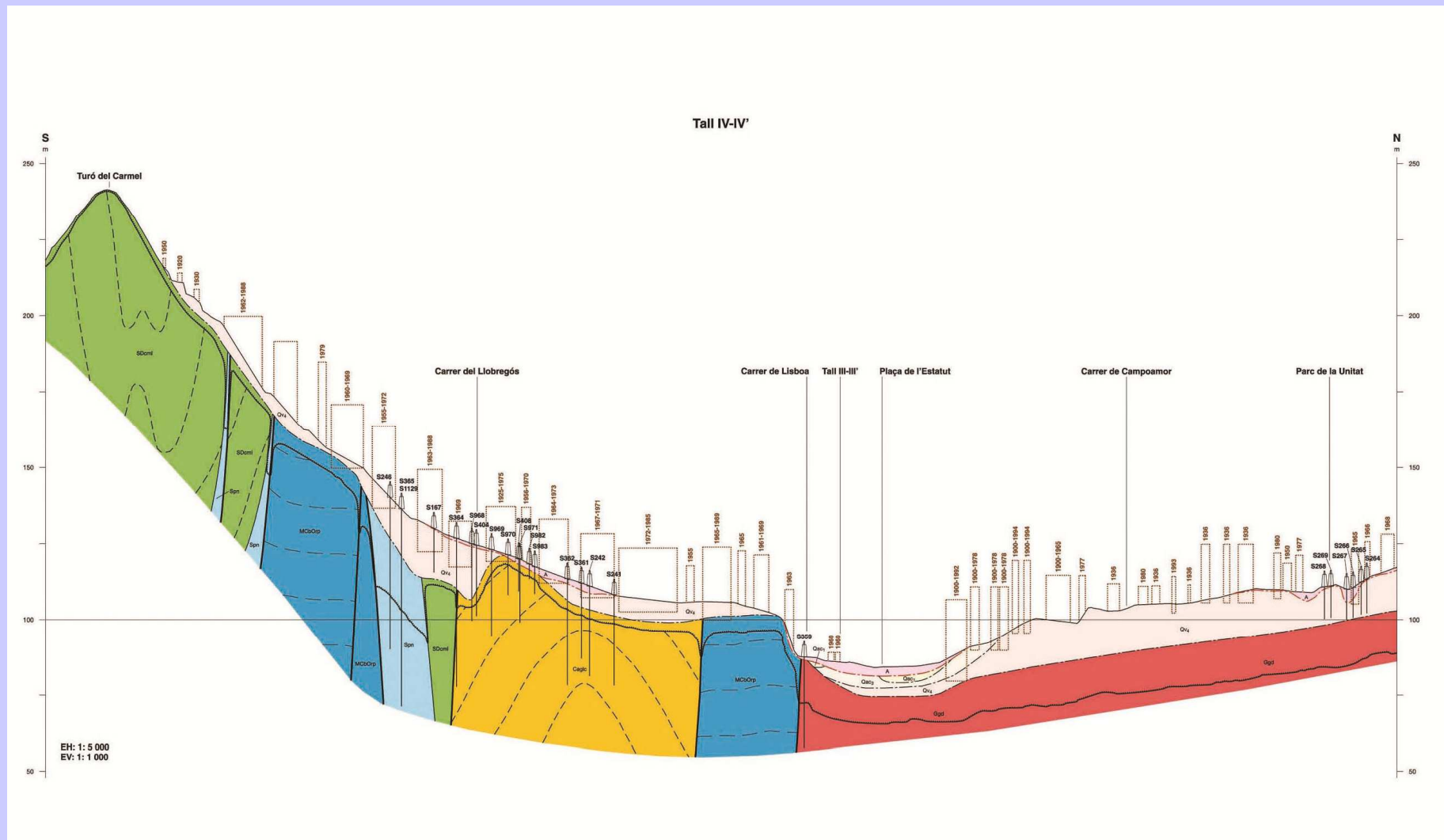
MAPA GEOLÒGIC DE L'IGC 1:5000

Mapa geològic de les zones urbanes 1:5 000

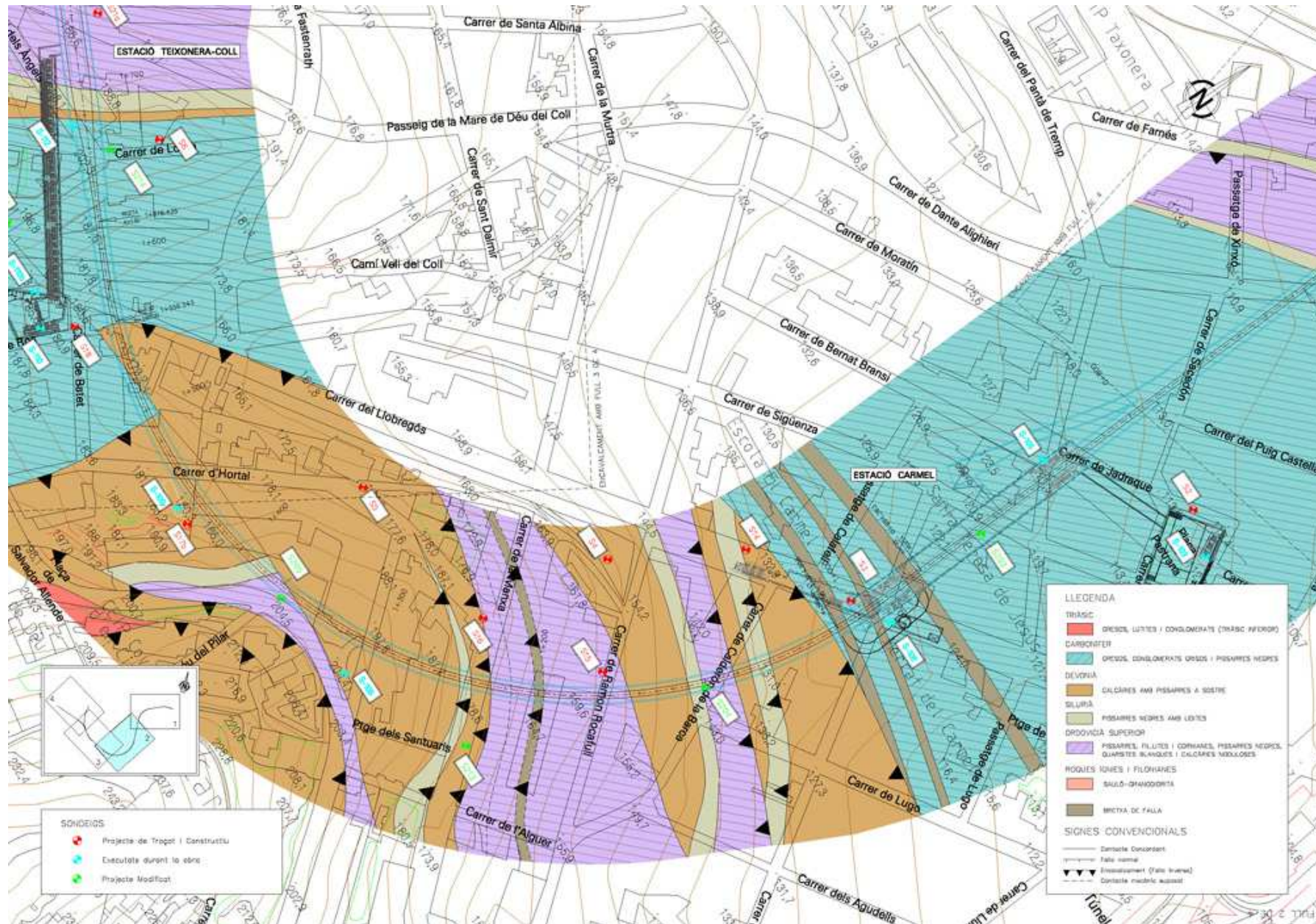
Barcelona-Horta 289-124 (421-1-4)



TALL GEOLÒGIC



MAPA GEOLÒGIC L5 METRO DE BARCELONA



TALL GEOLÒGIC L5 METRO DE BARCELONA

