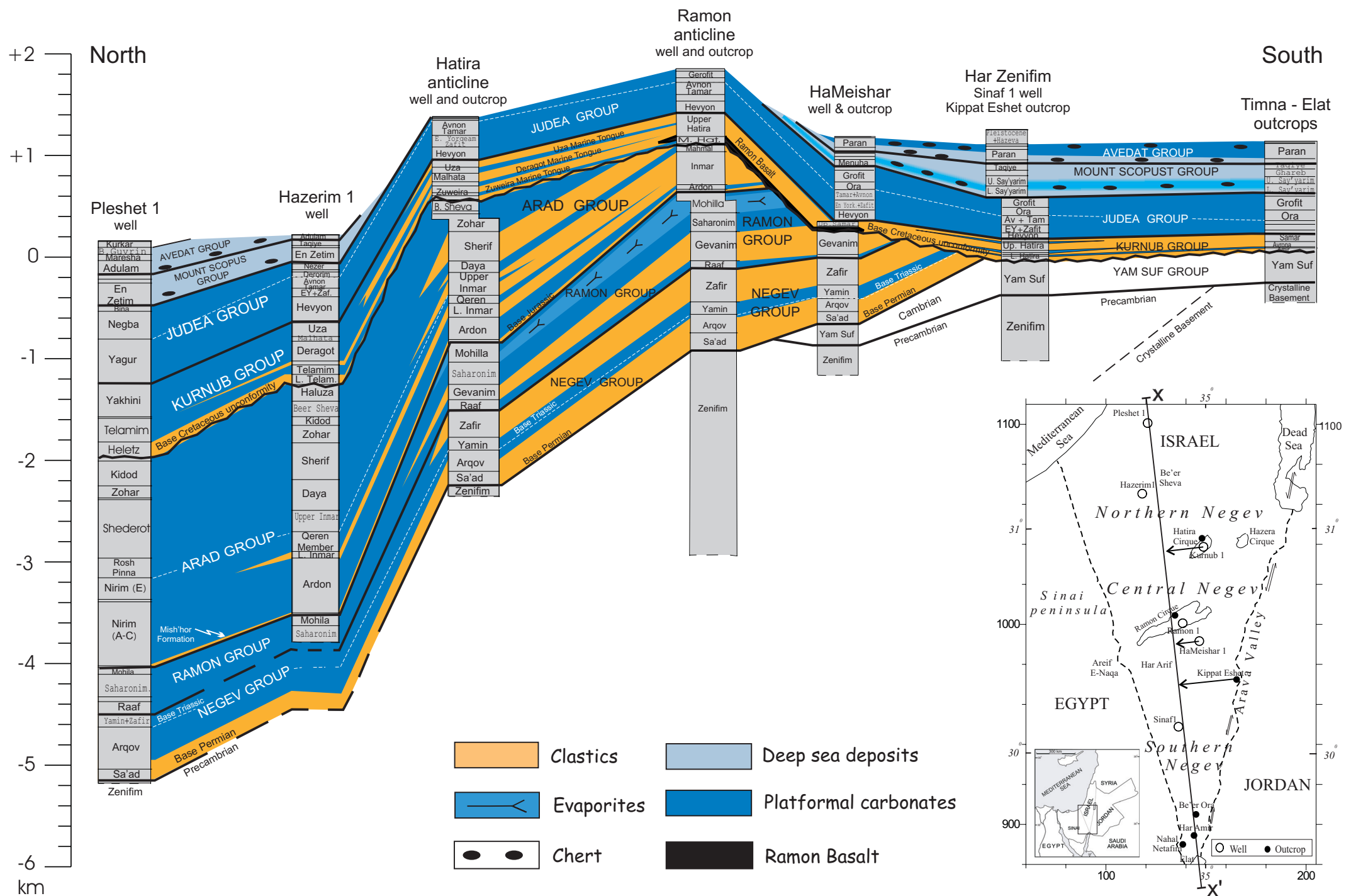




# Chronostratigraphic Table and Subsidence Curves of Southern Israel

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Lithostratigraphic section along the area studied (XX' in Fig. 1) including 7 composite columnar sections. The 4 middle sections are composed of boreholes and outcrops (separated by a small lateral step), though, the vertical position of each column was set according to the borehole (i.e., the outcrops are not at their true elevation relative to sea level). The Timna-Elat column, which is entirely based on outcrops, was positioned according to the elevation of the base Cretaceous unconformity. The numerous sources for these columnar sections (wells and outcrops) are listed below.

(1) The Pleshet 1 well represents the southern Shefela facies as shown in the left hand side columns of each table in Figures 2-7. Its stratigraphic subdivision follows Wolf and Gelberman. (1993) except for the Jurassic, where Wolf and Gelberman. (1993) uses the Negev nomenclature, whereas here the coastal plain nomenclature is used, as in the adjacent Helez Deep 1A well (Druckman and Kashai, 1981). In addition, the internal subdivision of the Nirim Formation follows Buchbinder (1986).

(2) The Hazerim 1 is the only well used here that did not reach the Precambrian. Its particular importance is that it allows tying the shefela/coastal plain facies to the Negev nomenclature. Triassic and Jurassic subdivision follows Druckman et al. (1983); Lower Cretaceous to Turonian from well logs; and Senonian to Oligocene taken from Gvirtzman et al. (1985).

(3) The Makhtesh Gadol is a deep erosional cirque at the crest of the elevated Hatira anticline, where rocks of the Judea, Kurnub and top Arad groups are exposed. Subdivision of the Judea Group follows Lewy and Weissbrod (1993). Subdivision of the Kurnub Group follows the type section of Greenbedrg (1968) as reinterpreted by Lewy and Weissbrod (1993). Subdivision of the Jurassic and below (mostly from the Kurnub 1 well) is taken from Druckman et al. (1983). The Mount Scopus and Avedat Groups are missing at this specific location, but are known from adjacent synclines.

(4) Makhtesh Ramon is another erosional cirque at the crest of the Ramon anticline. Subdivision of the Judea Group is compiled from several columnar sections measured at its cliffs (Garfunkel, 1964; Zilberman, 1977; Avni, 1991; and Ben David, 1991). Subdivision of the Kurnub Group, which changes dramatically in the Ramon area (Gvirtzman et al., 1998) is represented here by the Ma'ale Ha'atzmaut section at the northern cliffs of the cirque. Thicknesses of Jurassic units and below (Mahmal to Mohilla in outcrops, the rest from Ramon 1 borehole) are taken from Druckman et al. (1983).

(5) Hameishar region is located south of the elevated Ramon structure, where the Judea, Mount Scopus and Avedat Groups are exposed. The subdivision of these groups is taken from several columnar sections measured by Baer (1981) near the site of Hameishar 1 borehole or in adjacent anticlines. Thickness of the Kurnub Group is partly taken from the borehole and partly assumed from the isopach map published by Gvirtzman et al. (1998). Triassic and below (penetrated by Hameishar 1 borehole) follows Druckman et al. (1983).

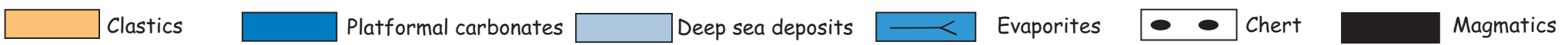
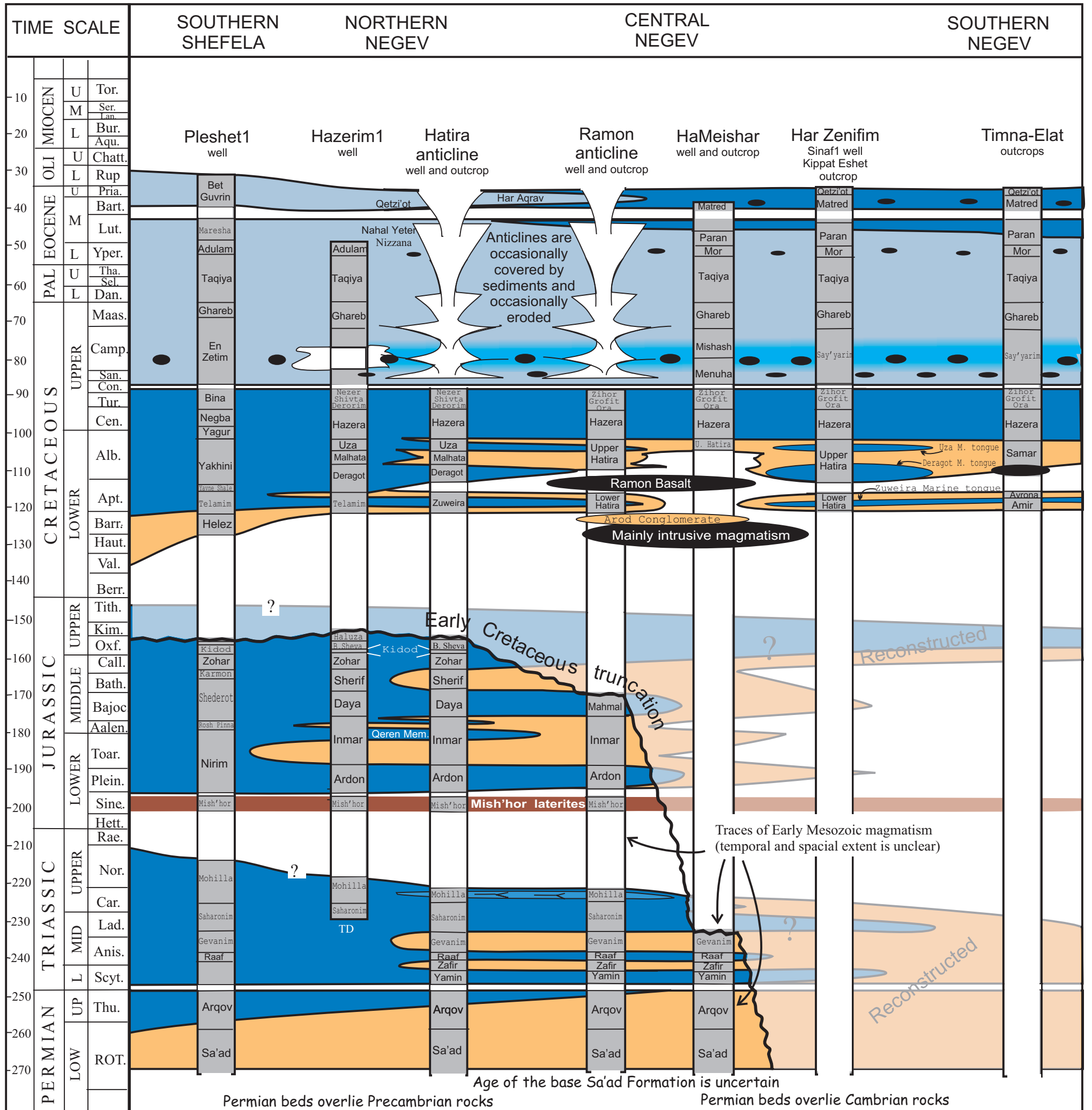
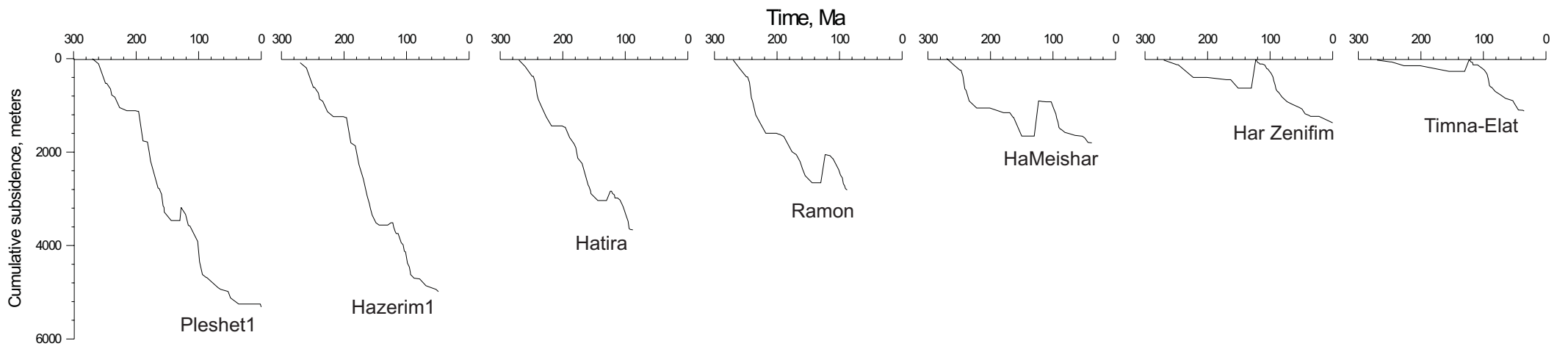
(6) Har Zenifim/Kippat Eshet The lower part of this composite section (Judea and deeper) is based on the Sinaf 1 well located just between Hameishar and Timna (Judea and Kurnub from well log and the rest from Druckman et al., 1983). The upper part of this section (Mount Scopus and Avedat groups) is projected along strike from Kippat Eshet ~30 km away from the main section line (see location map in Fig. 1). The Kippat Eshet section is based on reinterpretation of a columnar section measured by Sakal et al. (1966).

(7) The Timna/Elat region is represented in Figure 8 by a composite section. The subdivision of the Kurnub Group is represented by a section measured at Har Amir (Weissbrod et al., 1994). Subdivision of the Judea Group up to the Mishash Formation is based on a section measured by Bartov (1967) near Beer Ora and reinterpreted by Garfunkel (1978). Thickness of the Ghareb and Taqiye is taken from a section measured by Eyal (1967) in Nahal Netafim. Thickness of units in the Avedat Group is taken from a generalized section in the geological map of this region.



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A composite Chronostratigraphic chart of southern Israel accompanied by subsidence curves (references in Appendix 1). The reconstructed section removed by the Early Cretaceous erosion follows Garfunkel and Derin (1988). The non-deposition in the central Negev during most of the Early Cretaceous is based on Gvirtzman et al. (1998). The lack of Upper Cretaceous and Tertiary rocks in the Ramon and Hatira anticlines is schematically marked by funnel-shaped structures that express a series on non-deposition and erosion events, during a time in which the anticlines were occasionally covered by the sea and occasionally exposed. Note three periods of rapid subsidence: (1) Middle Triassic (2) Lower-Middle Jurassic (3) Middle Cretaceous. The first two events were associated with extension and normal faulting during the formation of the Levant passive margin (Garfunkel, 1988). The third represents thermal relaxation following the Early Cretaceous magmatism (Gvirtzman and Garfunkel, 1998).