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SUPPLEMENTAL APPENDICES FOR MID-8TH CENTURY CE SEISMIC SEQUENCES ALONG THE DEAD SEA TRANSFORM

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Supplemental Appendix A – Archaeoseismic Evidence

Location	Status[1]	Intensity	Notes
Bet She'an	definitive	≥ 8	Tsafrir and Foerster (1992b) report that a coin hoard was found underneath a debris and collapse layer. The latest coin was in near mint condition and dated to A.H. 131 (31 Aug. 748 - 19 Aug. 749 CE). This coin provides a terminus post quem for the earthquake and, due to its near mint condition, likely a terminus ante quem as well. Because it is part of a hoard, it is unlikely to be intrusive. Widespread and extensive destruction indicates that Bet She'an experienced high levels of Intensity.
Jerash - Church of Saint Theodore	probable	≥ 8	Crowfoot (1929:19) attributed destruction of the Church of Saint Theodore to a mid 8th century CE earthquake noting that "this date fits the latest class of objects which we found upon our floor levels". Crowfoot (1938:223-4) reports extensive evidence of destruction.
Jerash - Northwest Quarter	possible to probable	≥ 8	Coins, pottery, and radiocarbon dating point towards a mid 8th century CE earthquake evidenced in the collapse of a multi-story Umayyad house (Daugjberg et. al., 2022, Lichtenberger, 2016:643). Extensive evidence of seismic destructions attributed to an earthquake in 749 CE is reported by Kalaitzoglou et. al. (2022) from multiple trenches. Seismic effects include collapsed walls, columns, and roofing along with a skeleton with fractured bones and a strongly folded mosaic floor.
Jerash - Umayyad Mosque	possible		The Congregational Mosque of Jerash was uncovered in the 2000s and is located in the south half of Jerash just north of the Oval Plaza. Walmsley (2018:248-250) dates initial construction to between ca. 725 and ca. 735 CE. Archaeoseismic evidence for the 749 CE event is limited due to rebuilding evidence which is not tightly dated due to the "disturbed condition of the archaeological deposits" which prevented development of a stratigraphic framework. This led to a chronology which was "developed primarily from Hugh Barnes's observed architectural sequence" (Walmsley, 2018:248-250). Potential archaeoseismic damaged attributed to a 749 earthquake by El-Isa (1985) may refer to a structure in northeastern Jerash that was discovered and identified as a mosque in 1981 (Naghawi, 1982) but whose identification as such is now considered "somewhat doubtful" (Walmsley and Daamgaard, 2005:364)
Jerash - Umayyad House	possible		Gawlikowski (1992) dates destruction to after 770 CE which, if correct, suggests an earthquake later than mid 8th century CE

[1] In an effort to avoid circular logic, probability status is based on data from the site rather than a spatial relationship to a presumed epicenter or destruction observed at nearby sites.

Location	Status[1]	Intensity	Notes
Jerash - Macellum	possible	≥ 8	Uscatescu and Marot (2000:298-299) identified a destruction level composed of ashlar blocks and voussoirs from the fallen walls and vaults which was disturbed and thus difficult to date. The destruction layer was not specifically attributed to an earthquake and was approximately dated to second half of the eighth or early ninth centuries CE.
Jerash - Southwest Hill (Late Antique Jarash Project)	possible		Blanke (2018) reports rebuilding evidence for the 749 earthquake in Southwest Hill (Late Antique Jerash Project)
Jerash - Temple of Zeus	probable	≥ 8	Excavated cistern revealed a violent seismic event. The collapse layer contained architectural fragments and a human skeleton. After this event, the cistern was hermetically sealed and abandoned. The seismic event was dated based on the layer below (Layer 1). Ceramics dated up to the 1st half of the 8th century CE with many pieces from the Umayyad period and an Umayyad coin struck at Jerash dated to 694-710 CE (Rasson and Seigne, 1989).
Jerash - Hippodrome	probable	≥ 8	Ordered fall of masonry in eastern half of the carceres suggests seismic destruction. The stone tumble contained no ceramic or coin deposits. Dating is based on the layer below which contained material from the 3rd-8th centuries including a coin from the 1st half of the 8th century CE which provided a terminus post quem (Ostrasz and Kehrberg-Ostrasz, 2020 and Ostrasz, 1989).
Jerash – Wadi Suf	possible to probable	n/a	Lichtenberger et. al. (2019) examined three soil profiles in Wadi Suf (surrounding Jerash) using OSL (Optically Stimulated Luminescence). They interpreted the profiles to indicate that a change from fluvial to colluvial deposition in A.D. 760 ± 40 was due to a combination of climatic and social (wars and plagues) factors along with failure of the slope-terrace system and associated irrigation due to shake and liquefaction from the 749 A.D. earthquake together with loss of hinterland land management as agricultural demand from the city declined (due to the same earthquake).
Amman - Umayyad Palace	probable	≥ 8	Alamgro et. al. (2000) dated seismic destruction based on a limited amount of pottery which was “clearly from the Umayyad period” and “seems to be from the later part of the Umayyad period”. Archaeoseismic evidence suggests high levels of Intensity. A ridge effect is possible at the site.
Amman – Umayyad Congregational Mosque on the Citadel	possible	≥ 8	Arce (2000) did not provide dating evidence in a stratigraphic context but identified remains of what appears to be an Umayyad Congregational Mosque whose architectural and structural features suggest that it was an Umayyad construction. The demise of the Mosque was interpreted as a result of collapse due to an earthquake - presumably the earthquake of A.D. 749. Collapse evidence suggests high levels of local intensity. In addition to evidence of wall and arch collapse, there is evidence of foundation damage. A ridge effect is possible at the site. The Mosque was built on the highest part of the citadel.
Khirbet Yajuz	probable	≥ 8	An Early Abbasid terminus ante quem from Khalil and Kareem (2002) combined with an Umayyad terminus post quem from Khalil (1998) produces tightly dated archaeoseismic evidence. Extensive seismic damage uncovered at the site.
Khirbat Faris	possible	≥ 8	McQuitty et al. (2020) uncovered a variety of archaeoseismic evidence in Phase 3 in areas Far V and Far II. Evidence included collapsed walls, doorways, roofs, and arches along with collapse debris and a dump where earthquake debris was deposited post destruction. The collapse was described as sudden and catastrophic. The date of destruction was derived from ceramics and was constrained to between the 7th and 9th centuries CE.

Location	Status[1]	Intensity	Notes
Al-Muwaqqar	possible	≥ 8	Two seismic destruction events were identified by Najjar (1989). Wall damage or collapse was presumed in the earliest of the two destructions and is based on rebuilding evidence. A terminus ante quem between 730 and 840 CE was established for this event based on Abbasid pottery above the "destruction" leading to a conclusion that the site was damaged during one of the mid 8th century CE earthquakes.
Umayyad Structures South and Southwest of Haram esh-Sharif (aka Temple Mount)	possible	≥ 8	Mazar (1969) excavated a shaft at the SW corner of Haram esh-Sharif (Temple Mount) and concluded that Umayyad stratum A1 ended with an earthquake. The overlying stratum was classified as Post Umayyad. The earthquake is reported to have collapsed columns and walls and produced a rubble layer in Umayyad structures S and SW of Haram esh-Sharif that were destroyed a generation or two after initial construction. Ben Dov (1985:275-276) examined artifacts from a sewage canal that collected refuse from before Building 2 (S of Haram esh-Sharif) was destroyed. In the canal, he found pottery (Khirbet Mafjar ware) dating to the first half of the 8th century CE. Ben-Dov in Yadin et. al. (1976:97-101) reports that coins from the 8th century CE were also found in the sewer. Ben Dov (1985:321) reports archaeoseismic evidence in Building 2 that includes cracked walls, warped foundations, fallen columns, and sunken floors. Partial repairs are also reported from the second half of the 8th century CE in the Abbasid Period.
Jerusalem's City Walls	possible	≥ 7	Magness (1991) examined a report from a previous excavation of the Roman-Byzantine walls near the Damascus Gate and established a terminus post quem of the 1st half of the 8th century CE for wall repairs. Magness (1991) characterized the level used to establish the terminus post quem as “one of the most securely dated assemblages of published Byzantine and Umayyad pottery from an excavation in Jerusalem”. Magness (1991) re-examined another previous report and provided a date of the 7th-8th century CE for wall rebuilding of the Roman-Byzantine walls near the Armenian Garden. Weksler-Bdolah in Galor and Avni (2011:421) dated partial damage, “probably by an earthquake”, of the Roman-Byzantine walls to the mid 8th century CE. Evidence of renovations was also reported.
Baalbek			No archaeoseismic evidence has been reported that I know of.
Damascus			No archaeoseismic evidence has been reported that I know of.
Tiberias - Galei Kinneret	probable	≥ 7	Marco et. al. (2003) observed 0.35-1.0 m of what appears to be coseismic dip slip displacement accompanied by Type I (normal stress) masonry fractures - all on land. Seismic effects observed by Marco et. al. (2003) are constrained between Umayyad walls which were faulted and Abbasid structures which were unfaulted.
Tiberias - Beriniki Theatre	probable	≥ 8	Ferrario et. al. (2020) report on a Roman theater with extensive seismic effects underneath unfaulted debris flow deposits and unfaulted Abbasid-Fatimid structures. The date of the seismic damage observed in the Berniki Theater and the Southern Gate is constrained from the 6th to the ~10th century CE. If the faulted Umayyad Reservoir is considered (and is correctly dated as Umayyad), dating is constrained from 661 CE to the ~10th century CE.
Tiberias - Southern Gate	probable	≥ 8	Ferrario et. al. (2020) report warped walls with a pure normal component of displacement and ca. 45 cm. of total throw. The terminus post quem for the wall damage is the 6th century CE. The date of the seismic damage observed in the Berniki Theater and the Southern Gate is constrained from 6th to the ~10th century CE century CE. If the faulted Umayyad Reservoir is considered (and is correctly dated as Umayyad), dating is constrained from 661 CE to the ~10th century CE.

Location	Status[1]	Intensity	Notes
Tiberias - Umayyad Water Reservoir	probable		Ferrario et. al. (2020) report numerous fractures in an Umayyad reservoir which, if correctly identified as Umayyad, provides a terminus post quem of 661 - 750 CE for the fracturing.
Tiberias - Mount Berineke			Cytryn-Silverman (2015:199), citing Hirschfeld (2004b), lists modifications made to the church on Mount Berineke presumably after an earthquake in 749 CE. Ferrario et. al. (2014) performed a preliminary archaeoseismic examination of the Church on Mount Berineke. This apparent archaeoseismic evidence is undated.
Tiberias - Basilica	possible	≥ 8	Hirschfeld and Amir (2004) report that the eastern wing was probably destroyed in the earthquake of 749 CE.
Tiberias - House of the Bronzes	no evidence reported		
Tiberias – Umayyad Congregational Mosque	possible		Cytryn-Silverman (2015:208) notes that "the covered hall of the Umayyad mosque was refurbished at some stage by the introduction of a row of columns in the middle of the aisles" probably "following the earthquake of 749, and aimed at giving extra support to the roof."
Hippos Sussita	probable	≥ 8	Segal et. al. (2004:65) reports that chronological evidence for the one of the Sabbatical Year earthquakes "destroying" Hippos Sussita "has been confirmed by the objects found in the sealed contexts at the [northwest] church such as the coins and pottery (including oil lamps): see our Report 2001, 2002 and 2003 respectively." Seismic Effects at the site include a displaced wall and fallen columns. The potential for a topographic or ridge effect appears to be present at this location (Wechsler et. al., 2018b).
Kedesh	possible	≥ 8	The Roman Temple at Kedesh exhibits archaeoseismic effects and appears to have been abandoned in the 4th century CE; possibly due to the northern Cyril Quake of 363 CE. Archaeoseismic evidence at the site could be due to 363 CE and/or other earthquakes in the ensuing ~1600 years including the possibility that one of the mid 8th century CE earthquakes damaged the Temple. See Fischer et. al. (1984) and Schweppe et. al. (2017)
Omrit	possible		Overman in Stern et. al. (2008) reports that an earthquake in the middle of the eighth century CE appears to have brought about the final destruction of the site and its abandonment.
Minya	possible	≥ 8	Kuhnen et. al. (2018) reports that excavations indicate that the palace was not completely finished before it was damaged by an earthquake which they presume to have struck in the mid 8th century CE. Collapse evidence was found in a foundation trench.
Beit Alpha	possible	≥ 8	Based on numismatic evidence, Sukenik (1932) dated seismic destruction and a collapse layer to sometime after the 1st quarter of the 6th century CE
Jericho - Hisham's Palace	possible		Although Whitcomb (1988) dates major damage due to a later earthquake, Whitcomb (1988:63) suggests that there was an initial destruction around the mid 8th century CE.
Arbel	possible	≥ 8	Ilan and Izdarechet in Stern et. al. (1993) suggested that "the synagogue appears to have been destroyed in the mid-eighth century CE" based on coins found at the surface. The site hasn't been systematically excavated.
Gadara	possible	≥ 8	El-Khouri and Omoush (2015:15) noted the presence of ancient wall destruction (fallen stone layers) in many squares underneath the Abbasid layers, especially in Squares F5 and F6. They also noted the reuse of architectural elements in Abbasid constructions as well as prior destruction of a mosaic floor (El-Khouri and Omoush, 2015:16-17). Dating was based on pottery.
Tall Zira'a	possible		Kenkel and Hoss (2020:116, 271, 273) report that the earthquake of 749 CE caused destruction in Tall Zira'a and destroyed parts of nearby Gadara.
Hammat Gader			needs investigation - unable to access report.

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Lod/Ramla	probable	7	Seismic damage was precisely dated by Gorzalczany (2009b) using ceramics. Seismic effects reported by Gorzalczany and Salamon (2018) indicates that the site experienced liquefaction. Thus, the Intensity estimate derived from the EAE chart is downgraded from 8 to 7 - i.e. a lower bedrock intensity is required to explain the observed seismic effects. Rosen-Ayalon (2006) dated a rebuilding phase (2) of the White Mosque in Ramla to ~788/789 CE based on a comparison of unique architectural features found in a nearby cistern whose construction was by dated by inscription to 788/789 CE. Rosen-Ayalon (2006) suggested that the rebuilding phase was a response to seismic damage.
Mazliah (Ramla South)	probable	7	Taxel (2013b:176) suggested that Mazliah most likely ceased to exist due to the " 747–749 C.E. earthquake(s)" noting that this interpretation "is supported by clear and apparently well dated evidence of a severe earthquake that struck the site around the mid-eighth century". Taxel (2013b:176) also reports that the settlement was abandoned after its destruction and a "vast industrial area was founded above and within the earlier remains". This refers to the same well dated archaeoseismic evidence from Lod/Ramla. Gorzalczany (2008b:31) dated a seismic event to the mid 8th century CE in areas K1, J2, and possibly K2 which included collapsed, contorted, and cracked walls, sagging floors, broken pottery found in fallen position, and rebuilding after the event. Intensity estimate is downgraded from ≥ 8 to 7 due to the likely site effect of liquefaction (sandy soil + shallow water table).
Horvat Bira	possible		Taxel (2013b:169) states that a building that was formerly a Byzantine Church in Horvat Bira "was destroyed and abandoned, perhaps due to the 747–749 c.e. earthquake(s)" - according to the excavators. However, some parts of the chronology of this site is debated (e.g., see Taxel, 2013b:169-170).
Horvat Hermeshit	possible		Taxel (2013b:173) reports that Greenhut (1998) claimed that a wine press found on the site "went out of use at the beginning of the Early Islamic period" and "was damaged during the 747–749 c.e. earthquake(s), after it had already been abandoned".
Kafr Jinnis	possible		Taxel (2013b:173) reports that Messika (2006) attributed destruction of the Church and the entire Umayyad settlement "to the 747–749 c.e. earthquake(s) or to violent actions related to religious or political struggles." Taxel (2013b:173) noted that this could not be confirmed "based on the fragmentary evidence available."
Ṣarafand al-ʿAmar	possible	≥ 8	Kohn-Tavor (2008) identified a collapse layer from the end of Stratum X (dated as Umayyad - mid 7th - mid 8th centuries CE). Part of a building in Area F "continued in use during the Abbasid period and another part, which was destroyed at the end of the Umayyad period, was filled with crushed pottery vessels and sealed with stone collapse"
Mishmar David	possible	≥ 8	Yannai (2014) noted that in Area B "Stratum VI was destroyed in an earthquake (possibly in 749 CE), after which a number of new walls were built in the area (Stratum V)". Yannai (2014) noted that in sub-Area C1 "the buildings and tower of Stratum VI were destroyed by an earthquake, perhaps in 749 CE after which a new quarter of private houses (Stratum V) was built above the previous dwellings". Yannai (2014) noted that in sub-Area C3 Stratum VI structures "were destroyed in an earthquake" which would date to ~749 CE based on the Stratum (VI).
Capernaum	possible	≥ 8	Debated chronology. See Tzaferis (1989) and Magness (1997)

Location	Status[1]	Intensity	Notes
Qasrin	probable	≥ 8	Ceramics from undisturbed loci beneath a destruction layer in Synagogue B date to late 7th/early 8th century CE (Ma'oz and Killebrew, 1988). Ceramics in a stone tumble layer in House B date to the mid 8th century CE.
Kursi	possible		Vassilios Tzaferis in Stern et. al. (1993) states that Kursi was destroyed and abandoned after an earthquake in the middle of the 8th century CE.
Ramat Rahel	possible	≥ 8	Lipschitz et. al. (2011) found evidence of collapse and conflagration which they dated to 8th century CE/Umayyad noting that it was possibly caused by one of the Sabbatical Year Quakes.
Kathisma	no evidence		Much of the remains are missing - pilfered long after its demise and it is this pilfering which may have removed any obvious archaeoseismic evidence from earthquakes which struck in the mid 8th century CE. See Avner (2016)
Pella	probable	≥ 8	Extensive destruction including collapsed structures and skeletons of humans and animals was found in Area IV as reported by Walmsley and Smith (1982). Pottery and other finds date the destruction level to the middle 8th century CE and numismatic evidence provides a terminus post quem of A.H. 126 (743/744 CE). Walmsley (2013) suggested that the presence of animals indoors suggests that the earthquake struck in the winter. The earthquake killed apparently sleeping humans and domiciled animals further suggesting that it struck at night. Walmsley and Smith (1982:127) noted that one of the human skeletons in the Civic Complex Area IX "was found lying, as if sleeping". Walmsley (1992:185) also reported on the discovery of two human skeletons (male and female) in Area IV that had apparently fallen through the house from the main living area on the second story. There were "found in conjunction with a large mass of textile fragments". In an attempt to reconcile the skeletal evidence in Area IV at Pella (why were the animals and herdsman indoors ?) with a ~10 am earthquake report from Theophanes, Walmsley and Smith (1982:139) speculated that it may have been so cold that the herdsman kept the animals indoors and perhaps even stayed in bed himself. However, if one considers that the Holy Desert Earthquake likely struck at night, the more efficacious argument is that the humans and animals were indoors because they were in for the night.
Beit-Ras/Capitolias	possible	≥ 8	Mlynarczyk (2017) dated archaeoseismic evidence from Area 1-S to the mid 8th century CE based on ceramics.
al-Sinnabra/Beth Yerah	possible	≥ 7	Greenberg, Tal, and Da'adli (2017:217) noted that the site was dismantled down to the foundations after abandonment thus obscuring potential archaeoseismic evidence. It is possible that foundation cracks reported by Greenberg and Paz (2010) were caused by a mid 8th century CE earthquake which would indicate high levels of local intensity.
Karak	no evidence		I am not aware of any published or unpublished pre-Crusader excavations in Karak.
Mount Nebo			needs investigation
Abila	possible	≥ 8	Mare (1984) dated destruction of a triapsidal basilica in area A to approximately the 8th century CE based on Umayyad pottery sherds found in the vicinity of the Apse.

Location	Status[1]	Intensity	Notes
Umm al-Jimal	possible	≥ 8	de Vries (1993) noted that Umm al-Jimal was nearly totally abandoned after 750 CE and speculated that an earthquake could have been the cause. While specific archaeoseismic evidence was not mentioned in his report, collapsed masonry and debris are mentioned frequently in the various reports and articles about the site and de Vries (1993:448) found Umayyad pottery in the collapse debris in the apse of the Numerianos Church. In a later report, de Vries (2000) characterized the town as having undergone collapse in the 8th century and abandonment in the 9th century CE. Al-Tawalbeh et. al. (2019) examined the Roman barracks and, while not providing an explicit date, estimated a SW-NE strong motion direction and intensities of VII-VIII (7-8) using the Earthquake Archeological Effects chart of Rodríguez-Pascua et. al. (2013: 221-224).
Iraq el-Amir	no evidence		El-Isa (1985) observed "clear and intensive" earthquake deformations at the site however this archaeoseismic evidence is undated. El-Isa (1985) suggested the 31 BCE Josephus Quake as a possible candidate.
Petra - Petra Theater	possible		Jones (2021:3 Table 1) states that "the Phase VII destruction of the Main Theatre is difficult to date, as the structure had gone out of use long before". Destruction tentatively dated to 6th-8th centuries CE but may have occurred later. See also Hammond (1964).
Petra - Temple of the Winged Lions	possible	≥ 7	Dating presented in Hammond (1975) was based on analogy to Petra Theater. Philip Hammond excavated both the Petra Theater and Temple of the Winged Lions
Petra - Jabal Harun	probable	≥ 8	Mikkola et. al. (2008) characterized seismic destruction as major leading to collapse of the church's semidome and columns of the atrium as well as tilting of a wall towards the south. Dating appears to be based on iconoclastic defacing found inside the church which the excavators date, based on historical considerations, to the early 8th century. The excavators presume that the seismic destruction followed soon after the iconoclastic activity. A terminus post quem could be inferred from the start of the first iconoclasm which began in ~725 CE (Martin, 1930:16-36).
Petra - Petra Church	possible	≥ 8	Fiema et. al. (2001) characterized structural destruction of the church in Phase X as likely caused by an earthquake with a date that "is not easy to determine". A "very general terminus post quem" of the early 7th century CE was provided. Destruction due to a second earthquake was identified in Phase XIIA which was dated from late Umayyad to early Ottoman. Taken together this suggests that the first earthquake struck in the 7th or 8th century CE and the second struck between the 8th and 16th or 17th century CE.
Petra – Blue Chapel and the Ridge Church	probable	≥ 8	Perry in Bikai et. al. (2020:69-70) attributed fallen columns to a mid 8th century earthquake. A terminus post quem was established by ^{14}C dating an animal bone found underneath one column. Dating indicates that "the animal died between A.D. 658 and 782 CAL" before being consumed by the inhabitants. The column fell "shortly after that". Perry in Bikai et. al. (2020:470) also lists ceramic evidence as supporting this date of destruction. A collapsed vault and fallen columns which dented the floor of the bema suggest high levels of local Intensity.

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Aqaba - Ayla	probable	≥ 8	Damgaard (2008) and Damgaard (2011, Appendices:12) identified collapse and rebuilding evidence due to an 8th century CE earthquake. Whitcomb (1994) suggested an earthquake struck the site in the mid 8th century CE in his phasing for the site. al-Tarazi and Korjenkov (2007) identified two seismic destructions at the site and provided a terminus ante quem of ~750 CE for the first earthquake. al-Tarazi and Korjenkov (2007) estimated an intensity of IX or more for the first earthquake and surmised that the epicenter was close - a few tens of kilometers away - and to the NE. The site appears to be susceptible to liquefaction. Ayla was built on a sandy beach close to the Gulf of Aqaba. Modern excavators encountered a shallow water table.
Aqaba - Aila	possible	≥ 8	Evidence presented in Thomas et. al. (2007) suggests that Earthquake III is fairly well dated and struck in the 8th century CE.
Haluza	possible	≥ 8	Korjenkov and Mazor (2005) identified numerous seismic effects from two earthquakes at Haluza. The 2nd post-Byzantine earthquake has an apparently reliable terminus post quem of the 7th century CE but is missing a terminus ante quem due to abandonment. Korjenkov and Mazor (2005) estimated an Intensity of 8-9 with epicenter a few tens of kilometers away to the NE or SW - most likely to the NE.
Rehovot ba Negev	possible	≥ 8	Seismic Effects uncovered by Tsafrir et. al. (1988) and Korzhenkov and Mazor (2014) suggests an earthquake struck in the 7th or 8th century CE. Korzhenkov and Mazor (2014) estimate Intensity at 8-9 and appear to locate the epicenter to the ESE. There is a probable site effect present as much but not all of Rehovot Ba Negev was built on weak ground (confirmed by A. Korzhenkov, personal communication, 2021)
Shivta	possible	≥ 8	Erickson-Gini (2013) identified earthquake collapse at Shivta which she dated to “possibly in the Middle Islamic period” after “the site was abandoned at the end of the Early Islamic period”. Korjenkov and Mazor (1999a) identified a post Byzantine earthquake which struck after 7th century CE abandonment. The terminus ante quem for this earthquake is not well established. Korjenkov and Mazor (1999a) estimated an Intensity of 8-9 for the post Byzantine earthquake and placed the epicenter a few tens of kilometers away in the WSW direction. They also report that a site effect is not likely at this location.
Hama			Needs investigation. Walmsley (2013:89) reports possible earthquake evidence in Hamah in the 8th century CE: "The mound at Hamah apparently was walled (or re-walled) in the eighth century (Ploug 1985: 109-11), and although Ploug opts for a Byzantine date an Umayyad one fits better."
Aleppo	no evidence		Gonnella (2006:168-169) reports that textual sources report wall repairs after the Muslim conquest (~636-638 CE) were necessary due to prior earthquake damage. Very few pre-Ayyubid remains have been found at this site (the Aleppo Citadel). No evidence has been uncovered thus far for an 8th century CE earthquake at Aleppo.

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Reṣafa	possible		Sack et. al. (2010) reports seismic destruction that led to abandonment of Basilica B which "probably took place before the middle of the seventh century and certainly before the building of the Great Mosque was begun in the second quarter of the eighth century". Al Khabour (2016) notes that the Basilica of St. Sergius (Basilica A) suffered earthquake destructions but did not supply dates. The apse displays fractures that appear to be a result of earthquakes or differential subsidence. Sack et. al. (2010:307) reported that "from the building of the church [Basilica A first built in the 5th century CE] up to the abandonment of the city in the 13th century, earthquakes and the building ground weakened by underground dolines [aka sinkholes] have caused considerable damage".
Palmyra	possible	≥ 8	Intagliata (2018:27) reports that water pipes are believed to have been laid in Umayyad times, but were destroyed after a disastrous earthquake and then replaced in the Abbasid era (al-Asʿad and Stępniowski 1989, 209–10; Juchniewicz and Żuchowska 2012, 70). Juchniewicz and Żuchowska (2012:70) report the following: "Excavation in the Camp of Diocletian, in the area of Water Gate revealed pipeline which is dated by Barański to the Abbasid Period (Baranski, 1997, 9-10). This pipeline, as well as the earlier one dated to Omayyad Period, is clearly visible in the Great Colonnade, running along the Omayyad suq (al-Asʿad and Stępniowski 1989, 209–10). The Omayyad pipeline was replaced by the later one probably after earthquake. Some of the monumental architraves from the Great Colonnade fell down and destroyed the Omayyad conduits." Gawlikowski (1994:141) suggests that an earthquake struck the then abandoned Basilica around 800 CE leading to wall collapse.
Tel Taninnim			Needs investigation. Taxel (2013:83 n. 65) reports that da Costa (2008) in her review of Stieglitz et. al. (2006) suggests that the cause for the destruction of the Byzantine-Umayyad settlement [at Tel Taninnim] was the major earthquake of 749.

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Caesarea	probable	≥ 7	Ad et al (2018) excavated site LL just north of Caesarea's inner harbour where several ceilings collapsed inward, and there was evidence of a fire in the eastern warehouse. In the collapse in the corridor, the original order of the courses of the wall or vault could be clearly identified adding confidence to a seismic interpretation. Dating was based on ceramics and fairly tightly bound to the middle of the 8th century CE. Everhardt et. al. (2023) analyzed two radiocarbon samples of charcoal and various organic matter in the destruction layer which dated from 605 to 779 CE. Everhardt et. al. (2023) further examined two cores and a baulk in the collapse corridor and concluded that a tsunami stuck the structure soon after the earthquake thus extinguishing the fire and bringing in a deposit of marine sand. Based on Raban and Yankelevitz (2008:81) and Arnon (2008:85), Dey et. al. (2014) reports evidence for mid 8th century CE seismic destruction adjacent to the Temple Platform and, based on Holum et. al. (2008:30-31), probably adjacent to the Octagonal Church as well. Dey et. al. (2014) also interpreted landward marine layers that included a complete human skeleton as tsunamigenic and likely caused by one of the mid 8th century CE earthquakes. The marine layer lies in a coastal strip between the Temple Platform and the Theater and is dated to between ~500 and 870 CE. Additional Tsunamogenic Evidence (e.g., at Jisr al-Zakra) is discussed in the main article.
Baydha	no evidence		No evidence has been uncovered as of yet but Sinibaldi (2020:96-97) reports a Byzantine phase underneath Mosque 1 (aka the Eastern Mosque)
Tel Jezreel	possible		Moorhead (1997:147-148) speculated that a fissure in the bedrock in the apse of a Church in Area E may have been a result of an earthquake. However, there is debate as to the date of the fissure and whether an earlier structure was from the Byzantine or Crusader period. Grey (2014) reports that this debate was never resolved.
el-Lejjun	possible	≥ 8	Evidence reported by Groot et. al. (2006:183) for the 4th earthquake at el-Lejjun was found in Area B in the Barracks but dating can only be constrained to between ~600 and 1918 CE (assuming that the 3rd earthquake was the late 6th century Inscription at Areopolis Quake). deVries et. al. (2006:196) suggests that Umayyad abandonment of the Northwest Tower was likely triggered by a collapse and deVries et. al. (2006:207) found evidence of full scale destruction above layers of the 3rd earthquake in the northwest tower which perhaps occurred in the Umayyad period.
Castellum of Qasr Bshir	possible	≥ 8	Clark (1987:489-490) attributed collapse evidence to an earthquake which likely struck at the end of the Umayyad period.

Supplemental Appendix B – Paleoseismic Evidence

Location	Status	Intensity[2]	Notes
Hacipasa Trenches	possible	7+	The oldest event identified in the Ziyaret Trench dated to before 983 CE. A lower bound on age was not available due to insufficient radiocarbon dates. See Akyuz et. al. (2006).
Kazzab Trench	possible	7+	Ambiguous paleoseismic event ?S2 expressed as displacements along faults F2 and F3. Although Daeron et. al. (2007) favored an interpretation where this displacement was created during event S1 (dated 926-1381 CE) as a 'mole-track' like feature, they considered another interpretation that ?S2 was caused by a separate seismic event. Their age model date for ?S2 as a separate event spanned from 405 to 945 CE (2σ).
Jarmaq Trench	possible	7+	Nemer and Meghraoui (2006) date Event Z to after 84-239 CE. They suggested the Safed Earthquake of 1837 CE as the most likely candidate.
al-Harif Aqueduct	possible	7+	Event Y - Sbeinati et. al. (2010) state that Event Y, characterized from paleoseismology, appears to be older than A.D. 650–810 (unit d, trench A) and younger than A.D. 540–650 (unit d3 in trench C). The results of archaeoseismic investigations indicate that ages of CS-1 (A.D. 650–780) and tufa accumulation CS-3-3 (A.D. 639–883) postdate event Y. Combined together, this constrains Event Y to 540 - 780 CE. Dates presented are 2σ.
Qiryat-Shemona Rockfalls	no evidence	n/a	See Kanari et. al. (2019) and Kanari (2008)
Bet Zayda	probable	7+	Event CH2-E1 (675-801 CE) from Wechsler et. al. (2018a) - Estimated Magnitude 6.9-7.1.
Tel Rehov Trench	probable	7+ - moderate	Event III of Zilberman et. al. (2004) could correspond to one of the mid-8th century CE earthquakes as it is dated to the 8th century CE. Zilberman et. al. (2004) indicate that the event produced no vertical displacement and was identified as fractures which crossed Units 1-3. They speculated that the epicenter might have been distant which is also to say that local Intensity may have been moderate.
Tell Saidiyeh and Ghor Kabed Trenches	possible	7+	Ferry et. al. (2011) detected 12 surface rupturing seismic events in 4 trenches (T1-T4) in Tell Saidiyeh and Ghor Kabed; 10 of which were prehistoric. One of the two historical events (Y and Z) could correlate to one of the mid-8th century CE earthquakes however these events are not precisely dated. The tightest chronology came from the Ghor Kabed trenches (T1 and T2) where Events Y and Z were constrained to between 560 and 1800 CE.
Dir Hagla Trench	possible	7+	Event B dated to 700-900 CE based on pottery sherds. See Reches and Hoexter (1981)
ICDP Core 5017-1	possible	7	16.5 cm. thick turbidite - age 702 CE ± 44 (658-746 CE) indicating that this turbidite could alternatively have been triggered during the Jordan Valley Quake of 659/660 CE. See Lu et. al. (2020a)
En Feshka	probable	8 - 9 (both seismites)	Two seismites are closely spaced to each other; a 2.5 cm. thick brecciated (Type 4) seismite at 126.5 cm. depth with modeled Ages of 826 CE ± 31 (1σ) and 797 CE ± 68 (2σ) and a 1 cm. thick brecciated (Type 4) seismite at 125 cm. depth with modeled Ages of 831 CE ± 30 (1σ) and 802 CE ± 69 (2σ). See Kagan et. al. (2011)
En Gedi	possible	5.6 - 7	0.2 cm. thick linear wave (Type 1) seismite. Dates based on varve counts. See Migowski et. al. (2004) and Migowski (2001)
Nahal Ze 'elim	probable	8 - 9	2 cm. thick brecciated (Type 4) seismite - Modeled Age (1σ) of 774 AD ± 75. See Kagan et. al. (2011)
Qasr Tilah	possible	7+	Event III dated to 7th - 10th centuries CE. Dating based on radiocarbon and pottery sherds. See Haynes et. al. (2006).
Taybeh Trench	possible	7+	Event E3 - modeled age 551 CE ± 264. See LeFevre et. al. (2018).
Qatar Trench	probable	7+	Klinger et. al. (2015) reports two earthquakes [E4 and E5] which "had to happen very close in time as cracks associated with each event end within a very short distance in our trench". Klinger et. al. (2015) adds: "The existence of the distinct unit D [] prevents any ambiguity about the fact that two distinct events are recorded here. Based on our age distribution, the time bracket that includes the two earthquakes is 671 C.E.–845 C.E.. Event E4, the latter of the two earthquakes, produced more ground disruption than Event E5."
Taba Sabhka Trench	possible but unlikely	7+	Although Allison (2013) suggests that EQ IV, the oldest and most strongly expressed seismic event in the trench, was likely caused by a mid-8th century CE earthquake, when two discarded radiocarbon samples are included in developing an age-depth relationship, EQ IV appears to have struck earlier - e.g., between 400 and 100 BCE
Shehoret, Roded, and Avrona Alluvial Fan Trenches	possible	7+	Events 7, 8, and 9 in Trench T-18 have a wide spread of ages however, taken together, the evidence suggests the 1212 CE, 1068 CE, and one earlier earthquake, perhaps between ~500 CE and 1000 CE, struck the area. See Amit et. al. (2002) and Zilberman et. al. (2005).

[2] Minimum Intensity of 7 assumed at sites outside of the Dead Sea. See Supplemental Appendix G for how Intensities were estimated in the Dead Sea.

Supplemental Appendix C – Paleo-Landslide Evidence

Location	Status	Minimum PGA (g)	Likely PGA (g)	Likely Intensity[3]	Comments
Umm el-Qanatir	probable	0.36	0.5	8.2	Archaeoseismic evidence suggests Intensity ≥ 8. See Wechsler et. al. (2009).
Fishing Dock Landslide	possible	0.15 - 0.5	0.5	8.2	Undated landslide. See Yagoda-Biran et. al. (2010).
Ein Gev Landslide	possible	0.37	?	≥7.7	Dated to younger than 5 ka BP. See Katz et. al. (2009).

[3] PGA to Intensity conversions use Wald et. al. (1999).

Supplemental Appendix D– Textual accounts – Sabbatical Year Earthquake Sequence

Master Seismic Effects Table – Holy Desert Quake Textual Accounts

(lightly shaded rows could be due to Holy Desert or Talking Mule Quake)

Location	Description	Sources	Comments
Palestine	Earthquake - many died	Theophanes, Paul the Deacon, Anastasius Bibliothecarius, Megas Chronographos, Cedrenus, Minor Chronicles	
By the Jordan	Earthquake, many died	Theophanes, Paul the Deacon, Anastasius Bibliothecarius, Megas Chronographos, Cedrenus	
All of Syria	Earthquake, many died	Theophanes, Paul the Deacon, Anastasius Bibliothecarius, Megas Chronographos, Cedrenus	Southern Syria likely affected by Holy Desert Quake but not northern Syria. Specifying all of Syria could represent conflation with the Talking Mule Quake.
Desert outside Jerusalem	Churches and Monasteries collapsed	Theophanes, Paul the Deacon, Anastasius Bibliothecarius, Megas Chronographos, Cedrenus	Megas Chronographos did not supply a location where the churches and monasteries collapsed.
Wilderness of Saba	Village Swallowed	Cedrenus	
Various places	Foreshocks and Aftershocks	Michael the Syrian, Chronicon Ad Annum 1234, Abu l'Fath, Ibn Tagri Birdi, As-Suyuti, Mujir al-Din	Michael the Syrian says "there was an earthquake at Damascus 'which lasted for days and shook her like leaves on a tree'". Chronicon Ad Annum, possibly sharing a source with Michael, states that "there was an earthquake at Damascus and in the whole surrounding area, which lasted for days." Abu l'Fath, without specifying a location, said that "those who survived the earthquake stayed out in the open for many days while the earth was still shaking underneath them." Ibn Tagri Birdi, in describing Jerusalem, said that "the inhabitants were forced to take refuge in the desert, where they stayed for forty days." As-Suyuti described an earthquake in Damascus in A.H. 131 where the main shock was followed by an aftershock. As-Suyuti described another Damascus earthquake in A.H. 130 (which may be a repeat of his A.H. 131 account) where the inhabitants had to leave town and rescue efforts were delayed by several days. The delay may have been due to the danger of continuing aftershocks. Mujir al-Din described 3 shocks on the same day in Jerusalem where the last shock was the main shock and struck at night.

Location	Description	Sources	Comments
Coastal Palestine	Tsunami destroyed many villages on the coast	Michael the Syrian, Chronicon Ad Annum 1234, al-Muqaffa', al-Makin, Chronicon Orientale, Ra'ash Shvi'it	Some tsunami reports could really be describing the Sea of Galilee and/or the Dead Sea rather than coastal Palestine however al-Muqaffa', al-Makin, and Chronicon Orientale, reporting from Egypt, said many ships sank which suggests a coastal tsunami swamped ships close to shore. Tsunamogenic evidence from Caesarea – both offshore and on land - may corroborate this account. Although the dating of these deposits is imprecise (5th – 8th centuries CE for the offshore deposits and ca. 500 – 870 CE on land), Tyuleneva et. al. (2017) identified what appears to be the same tsunamite in a core (Jisr al-Zarka 6) taken offshore of nearby Jisr al-Zakra. This core was located ~1.5-4.5 km. north of the Caesarea cores. The tsunamite deposit from Jisr al-Zarka was more tightly dated to 658-781 CE (1292-1169 Cal BP). The final conclusion is there probably was a tsunami that struck coastal Palestine and there may have also been destructive seiches in the Sea of Galilee and/or the Dead Sea.
Coastal Palestine	Earthquake – devastation and death	Agapius of Menbij	"there was a violent earthquake on the coast of the sea of Palestine. Many places were devastated, and many people perished."
Moab (N Dead Sea or Sea of Galilee)	fortress on shore moved 3 miles by seismic sea wave	Michael the Syrian, Chronicon Ad Annum 1234	Michael the Syrian and Chronicon Ad Annum 1234 both refer to a fortress in Moab inhabited by Yemenite Arabs who Michael the Syrian specifically refers to as the Yemenite Taiyayê tribe. This would appear to describe a destructive seiche in the Dead Sea. Ambraseys (2009) suggests the possibility that this account of the destruction of a fortress in Moab where the Yemenite Taiyayê tribe lived may refer to an earthquake in Yemen in 742 CE (see Ambraseys et. al., 1994:25-26). Hoyland (2011:272 n. 824) noted that Michael the Syrian and Chronicon Ad Annum 1234 both stated that the fortress was in located Balqa - also known as Moab - where Balqa is further north than the traditional understanding of Moab and includes Amman as its capital. This in turn could indicate that these two sources were using Moab "in a general way to refer to the east side of the Jordan". If so, the seismic sea wave could have occurred in the Sea of Galilee possibly due to an underwater landslide or coseismic displacement. Onshore landslide evidence around the Sea of Galilee appears to be present at Umm al Qanatir due to this earthquake (See Supplemental Appendix C - Umm el-Qanatir and Wechsler et. al., 2009) and up to 1 meter of coseismic dip displacement uncovered on Tiberias's shoreline due to the same Quake (See Supplemental Appendix A - Tiberias - Galei Kinneret and Marco et. al., 2003)
Jerusalem	many houses collapsed or destruction	al-Dhahabi, Ibn Tagri Birdi, Mujir al-Din	
al-Aqsa Mosque in Jerusalem	damaged	al-Maqdisi, al-Dhahabi, Jamal ad Din Ahmad, Mujir al-Din	

Location	Description	Sources	Comments
Tiberias	destroyed	Michael the Syrian, Chronicon Ad Annum 1234, Agapius of Menbij, Ra'ash Shvi'it	
Egypt	felt only but Damietta suffered damage	al-Muqaffa', Chronicle Orientale	Only al-Muqaffa' mentioned Damietta
Damascus	earthquake with aftershocks for days	Michael the Syrian, Chronicon Ad Annum 1234, as-Suyuti	Michael the Syrian says "there was an earthquake at Damascus 'which lasted for days and shook her like leaves on a tree'". Chronicon Ad Annum, possibly sharing a source with Michael, states that "there was an earthquake at Damascus and in the whole surrounding area, which lasted for days." As-Suyuti described an earthquake in Damascus in A.H. 131 where the main shock was followed by an aftershock. As-Suyuti described another Damascus earthquake in A.H. 130 (which may be a repeat of his A.H. 131 account) where the inhabitants had to leave town and rescue efforts were delayed by several days. The delay may have been due to the danger of continuing aftershocks.
Ghautah and Dareya	many died	Michael the Syrian, Chronicon Ad Annum 1234	
Bosrah and Nawa	entirely swallowed up or razed to their foundations	Michael the Syrian, Chronicon Ad Annum 1234	
Daraat	entirely swallowed up	Michael the Syrian	Sbeinati et. al. (2005) locate this as the modern Syrian town of Daraa
Ba'albek	much of it collapsed, spring "turned to blood"	Michael the Syrian, Chronicon Ad Annum 1234	Modeling indicates this damage could be due to Holy Desert Quake or Talking Mule Quake
Unspecified	Many structures destroyed by an earthquake	Zonaras, al-Muqaffa', al-Makin, Chronicon Orientale, Agapius of Menbij	Zonaras - many homes and churches were destroyed al-Muqaffa' - 600 cities and villages affected, many houses ruined in all the cities al-Makin - 100 or 600 cities damaged or destroyed. Chronicon Orientale - 600 forts, towns, and cities were razed to the ground. Agapius of Menbij - many places devastated
Various Places	Many Earthquakes	Cedrenus, Elias of Nisibis	Cedrenus appears to echo Luke 21:11 in saying "there were many earthquakes in various places". Elias of Nisibis possibly discussing the Holy Desert Quake, the Talking Mule Quake, and other quakes also says this was "a year in which there were many earthquakes."

Location	Description	Sources	Comments
Unspecified or Mount Tabor	Translational Landslide	Theophanes, Paul the Deacon, Nicephorus, Anastasius Bibliothecarius, Georgius Monachus, Cedrenus, Elias of Nisibis, Michael the Syrian, Chronicon Ad Annum 1234	Byzantine Authors do not specifically locate the landslide beyond indicating that it was in a mountainous region and by implication in Syria – likely northern Syria. Elias of Nisibis, Michael the Syrian, and Chronicon Ad Annum 1234 locate the landslide on Mount Tabor possibly for literary/theological reasons as Mount Tabor was and still is a pilgrimage site for the influential New Testament story of the Transfiguration. If this landslide did occur on Mount Tabor, it would have been a seismic effect of the Holy Desert Quake. Absent dated landslide evidence from Mount Tabor, it is probably best to assume that this landslide took place in Syria.
Syria or Jericho	Spring moved	Paul the Deacon, Anastasius Bibliothecarius, Michael the Syrian, Chronicon Ad Annum	Paul the Deacon and Anastasius Bibliothecarius do not specify a location and associate this movement with the Talking Mule Quake which suggests a location in Syria – probably northern Syria. Michael the Syrian locates the spring in Jericho. Chronicon Ad Annum 1234 locates this in Jericho but says the spring stayed put and the nearby river moved 6 miles.
Beit Qubayeh	fortress overthrown - deaths	Michael the Syrian, Chronicon Ad Annum 1234	This could be a seismic effect for the Holy Desert Quake or the Talking Mule Quake depending on the fortress' location. Hoyland (2011:271 n. 821) notes that “Muslim sources know of a place called the palace (qasr) of Hajjaj, that was just outside Damascus, in view of the Jabiya gate (e.g. Dhahabi. 9.286: Yaqut. `Qasr Hajjaj'), but this may not be what is meant”. Ambraseys (2005:124 n. 20) states that the location of Beit Qoubaya is uncertain while noting that “there is a site in northern Lebanon called al-Qubayyat (35.57°N, 36.29°E - see Dussaud, 1927. 90, 94-95) southwest of Homs.” However, Ambraseys (2005:124 n. 20) cautioned that “damage to Homs, an important urban centre, is not mentioned.”

Master Seismic Effects – Talking Mule Quake Textual Accounts

(lightly shaded rows could be due to Holy Desert or Talking Mule Quake)

Location	Description	Sources	Comments
Syria	Earthquake, Destruction, and Death	Theophanes, Paul the Deacon, Nicephorus, Anastasius Bibliothecarius, Georgius Monachus, Cedrenus	
Syria	Some cities destroyed	Theophanes, Nicephorus, Georgius Monachus, Cedrenus	
Syria	Some cities partially destroyed	Theophanes, Nicephorus, Georgius Monachus, Cedrenus	
Jazira (N Mesopotamia)	Earth Fissure and Sand Boils	Theophanes, Paul the Deacon, Nicephorus, Anastasius Bibliothecarius, Georgius Monachus, Cedrenus, Glycas	Glycas does not mention the sand boils. PGA of sand boils estimated at 0.2 - 0.5 g according to Fig. 9 of Obermeier (1996). PGA = 0.2 - 0.5 g equates to I = 6.7 - 8.2 (MMI scale) using the transform of Wald et. al. (1999).
Mabbug	destruction everywhere - Church and Walls collapsed	Pseudo-Dionysius of Tell-Mahre, Elias of Nisibis, Michael the Syrian, Chronicon Ad Annum 1234	Pseudo-Dionysius of Tell-Mahre and Elias of Nisibis only mention church collapse.
Damascus	earthquake with aftershocks for days	Michael the Syrian, Chronicon Ad Annum 1234, as-Suyuti	Michael the Syrian says “there was an earthquake at Damascus ‘which lasted for days and shook her like leaves on a tree’”. Chronicon Ad Annum, possibly sharing a source with Michael, states that “there was an earthquake at Damascus and in the whole surrounding area, which lasted for days.” As-Suyuti described an earthquake in Damascus in A.H. 131 where the main shock was followed by an aftershock. As-Suyuti described another Damascus earthquake in A.H. 130 (which may be a repeat of his A.H. 131 account) where the inhabitants had to leave town and rescue efforts were delayed by several days. The delay may have been due to the danger of continuing aftershocks.
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Bosrah and Nawa	entirely swallowed up or razed to their foundations	Michael the Syrian, Chronicon Ad Annum 1234	
Daraat	entirely swallowed up	Michael the Syrian	Sbeinati et. al. (2005) locate this as the modern Syrian town of Daraa
Ba'albek	much of it collapsed, spring "turned to blood"	Michael the Syrian, Chronicon Ad Annum 1234	Modeling indicates this damage could be due to Holy Desert Quake or Talking Mule Quake

Location	Description	Sources	Comments
Unspecified	Many structures destroyed by an earthquake	Zonaras, al-Muqaffa', al-Makin, Chronicon Orientale, Agapius of Menbij	Zonaras - many homes and churches were destroyed al-Muqaffa' - 600 cities and villages affected, many houses ruined in all the cities al-Makin - 100 or 600 cities damaged or destroyed. Chronicon Orientale - 600 forts, towns, and cities were razed to the ground. Agapius of Menbij - many places devastated
Various Places	Many earthquakes	Elias of Nisibis	Elias of Nisibis possibly discussing the Holy Desert Quake, the Talking Mule Quake, and other quakes also says this was "a year in which there were many earthquakes."
Unspecified or Mount Tabor	Translational Landslide	Theophanes, Paul the Deacon, Nicephorus, Anastasius Bibliothecarius, Georgius Monachus, Cedrenus, Elias of Nisibis, Michael the Syrian, Chronicon Ad Annum 1234	Byzantine Authors do not specifically locate the landslide beyond indicating that it was in a mountainous region and by implication in Syria – likely northern Syria. Elias of Nisibis, Michael the Syrian, and Chronicon Ad Annum 1234 locate the landslide on Mount Tabor possibly for literary/theological reasons as Mount Tabor was and still is a pilgrimage site for the influential New Testament story of the Transfiguration. If this landslide did occur on Mount Tabor, it would have been a seismic effect of the Holy Desert Quake. Absent dated landslide evidence from Mount Tabor, it is probably best to assume that this landslide took place in Syria.
Syria or Jericho	Spring moved	Paul the Deacon, Anastasius Bibliothecarius, Michael the Syrian, Chronicon Ad Annum	Paul the Deacon and Anastasius Bibliothecarius do not specify a location and associate this movement with Talking Mule Quake which suggests a location in Syria. Michael the Syrian locates the spring in Jericho. Chronicon Ad Annum 1234 locates this in Jericho but says the spring stayed put and the nearby river moved 6 miles.
Beit Qubayeh	fortress overthrown - deaths	Michael the Syrian, Chronicon Ad Annum 1234	This could be a seismic effect for the Holy Desert Quake or the Talking Mule Quake depending on the fortress' location. Hoyland (2011:271 n. 821) notes that "Muslim sources know of a place called the palace (qasr) of Hajjaj, that was just outside Damascus, in view of the Jabiya gate (e.g. Dhahabi. 9.286: Yaqut. `Qasr Hajjaj'), but this may not be what is meant". Ambraseys (2005:124 n. 20) states that the location of Beit Qoubaya is uncertain while noting that "there is a site in northern Lebanon called al-Qubayyat (35.57°N, 36.29°E - see Dussaud, 1927. 90, 94-95) southwest of Homs." However, Ambraseys (2005:124 n. 20) cautioned that "damage to Homs, an important urban centre, is not mentioned."

Textual Accounts – Sabbatical Year Quake Sequence

Author Text & Language	Date & Location	Earthquake	Translation	Text
Paul the Deacon Historia Romana Latin	End of the 8th Century CE Lake Como, Italy	Holy Desert Quake	Jefferson Williams from Historia Miscella by Landolfus Sagax (p. 696)	English In the 6th year of Constantine, there was a great earthquake in Palestine, by the Jordan, and in all of Syria; in the month of January at the 4th hour. An innumerable multitude perished - many tens of thousands. Churches and Monasteries collapsed. The worst was in the wilderness of the Holy City (Jerusalem). Latin Anno sexto imperij Constantini, factus et terraemotus magnus in Palestina, & circa Iordanem, & totam Syriam, mense Ianuario, hora quarta, & multa milia, quin & innumerabilia mortua funt, ecclesiaeq; ac monasteria corruerút, & maxime penes eremum Sanctae ciutatis.

Author Text & Language	Date & Location	Earthquake	Translation	Text
Paul the Deacon Historia Romana Latin	End of the 8th Century CE	Talking Mule Quake	Jefferson Williams from Historia Miscella by Landolfus Sagax (pp. 700-701)	English 9th year of Constantine ... [Porrò] On the 8th of February [eiusdem] 3rd indiction, the son Leo was born to emperor Constantine from the daughter of Chagan of Chazaria. That same year there was an earthquake in Syria, an enormous and terrible [calamity]. Many died. A spring [moved ?]. In another place in the mountains, a village moved for about six miles with its walls and homes intact and without any small thing dying. Finally, In Mesopotamia, the earth split two thousand [feet?] and out of the chasm came a different soil which was white and sandy. Out of this chasm emerged a spotless mule speaking in a human voice which predicted an invasion by a foreign army into the land of the Arabs. This came true. Latin Anno nono imperij Constantini ... Porrò octaua Kalendas Februarij eiusdem tertię Indictionis, natus est Imperatori Constantino filius quem nominauit Leonem, ex Chaiani Cazariae filia. Anno verò eodem terraemotus factus est in Syria, & ingens ac terribilis caſus, vnde ciuitatum aliae quidem penitùs exterminatae ſunt, aliae verò mcdiocriter, aliae autem à motanis ad fubiecta campeſtria cum muris & habitationibus ſuis integrae migrauerunt & ſaluę quaſi ad miliaria ſex, vel etiam modicum quid vltrà. Denique aſſeuerauerút hivqui proprijs viſibus terram Mesopotamiae contemplati ſunt, in longitudine diſruptam fuiſſe ad miliaria duo, & ex profundo eius afcendiffe aliam terram nimis albam & hareno fam, de cuius medio aſcendit, vt aiunt, animal mulinum incontaminatum, loquens humana voce, & praenuncians gentis incurſionem ab eremo aduerſus Arabes. quod & factum eſt.

Author Text & Language	Date & Location	Earthquake	Translation	Text
Anastasius Bibliothecarius Chronographia Tripartita Latin	871-874 CE[4] Rome	Holy Desert Quake	Jefferson Williams from Niebuhr (1828:225)	English Anno Mundi 6238, divine incarnation year 738. In the 6th year of Constantine there was a powerful earthquake in Palestine, by the Jordan, and in all of Syria in January, at the 4th hour. Thousands died, an innumerable multitude perished, churches and monasteries collapsed, and it was worst in the desert of the Holy City. Latin Mundi anno 6238, divinae incarnationis anno 738, anno vero imperii Constantinl sexto factus est terrae motus magnus in Palaestina et circa lordanem et totam Syriara mense lanuario, hora quarta, et multa milia, quin et innumcrablla mortua sunt, eccleslaeque ac monasteria corruerunt, et maxime penes eremum sanctae civitatls.

[4] Neil (1998:46) notes that translator and editor de Boor opined that Anastasius accessed an older non extant version of Theophanes making Anastasius' version an effectively older version of Theophanes.

Author Text & Language	Date & Location	Earthquake	Translation	Text
Anastasius Bibliothecarius Chronographia Tripartita Latin	871-874 CE[5] Rome	Talking Mule Quake	Jefferson Williams from Niebuhr (1828:228)	English Constantine's 9th year ... … That year there was an earthquake in Syria, a terrible calamity. Many died. A spring [moved?]. In another place in the mountains, a village moved with its walls and homes intact for 6 Roman miles. Finally in Mesopotamia, the earth split two thousand feet and out of the chasm came a white sandy soil and a spotless mule which spoke in a human voice and prophesied that the Arab lands would be invaded by a foreign army. And this prophecy came true. Latin Anno imperii Constantini 9. … Anno vero eodem factus est terrae motus in Syria, et ingens ac terribilis casus, unde civitatum aliae quidem penitus exterminatae sunt, aiiae vero mediocriter, aliae autera a montanis ad subiecta campestria cum muris et habitationibus suis integrae migraverunt et salvae quasl ad miliaria sex vel etiam modicum quid ultra. denique asseveraverunt hi qui propriis visibus terram Mesopotamiae contemplati sunl, in iongitudinem diruptam fuisse ad miliaria duo, ct ex profundo eius ascendisse aiiam terram nimis albam et arenosam, de cuius medio ascendit, ut aiunt, animal mulinum incontaminatum, loquens humana voce, et praenuntians gentis incursionem ab eremo adversus Arabes. quod et factum est. Praeterca sequenti anno quartae indictionis, solemnitate sanctae pentecostes , coronavit Constantinus imperator Leoncm filium suum imperatorem per Anastaslum patrlarcham consentaneum suum.

[5] Neil (1998:46) notes that translator and editor de Boor opined that Anastasius accessed an older non extant version of Theophanes making Anastasius' version an effectively older version of Theophanes.

Author Text & Language	Date & Location	Earthquake	Translation	Text
Theophanes Chronicle Greek	810-815 CE Constantinople	Holy Desert Quake	Mango et. al. (1997:585-586)	[A.M. 6238, AD 745/6] Constantine, 6th year Marouam, 3rd year Zacharias, 13th year Anastasios, 17th year Theophylaktos, 3rd year In this year there was a great earthquake in Palestine, by the Jordan and in all of Syria on 18 January, in the 4th hour. Numberless multitudes perished, churches and monasteries collapsed, especially those in the desert of the Holy City. In the same year a pestilence that had started in Sicily and Calabria travelled like a spreading fire all through the 14th indiction to Monobasia, Hellas, and the adjoining islands, thus scourging in advance the impious Constantine and restraining his fury against the Church and the holy icons, even though he remained unrepentant like Pharaoh of old. This disease of the bubonic plague spread to the Imperial City in the 15th indiction. All of a sudden, without visible cause, there appeared many oily crosslets upon men's garments, on the altar cloths of churches, and on hangings. The mysteriousness of this presage inspired great sorrow and despondency among the people. Then God's wrath started destroying not only the inhabitants of the City, but also those of all its outskirts. Many men had hallucinations and, being in ecstasy, imagined to be in the company of certain strangers of terrible aspect who, as it were, addressed in friendly fashion those they met and conversed with them. Taking note of their conversation, they later reported it. They also saw the same men entering houses, killing some of the inmates, and wounding others with the sword. Most of what they said came to pass just as they had seen it. In the spring of the 1st indiction the plague intensified and in the summer it flared up all at once so that entire households were completely shut up and there was no one to bury the dead. Because of extreme necessity a way was devised of placing planks upon animals saddled with four paniers each and so removing the dead or piling them likewise one upon the other in carts. When all the urban and suburban cemeteries had been filled as well as empty cisterns and ditches, and many vineyards had been dug up and even the orchards within the old walls to make room for the burial of human bodies, only then was the need satisfied. When every household had been destroyed by this calamity on account of the impious removal of the holy icons by the rulers, straight away the fleet of the Hagarenes sailed from Alexandria to Cyprus, where the Roman fleet happened to be. The strategos of the Kibyraiots fell upon them suddenly in the harbour of Keramaia and seized the mouth of the harbour. Out of 1,000 dromones it is said that only three escaped.

Author Text & Language	Date & Location	Earthquake	Translation	Text
Theophanes Chronicle Greek	810-815 CE Constantinople	Talking Mule Quake	Mango et. al. (1997:588-589)	[A.M. 6241, AD 748/9] Constantine, 9th year Marouam, 6th year Zacharias, 16th year Anastasios, 20th year Theophylaktos, 6th year In this year Marouam was pursued by the Maurophoroi, who captured him and killed him after waging a very heavy war. They were commanded by Salim, son of Alim, one of the aforementioned fugitives who had sent Aboumouslim on his mission3. The rest of them gathered in Samaria and Trachonitis and awarded their leadership by lot to Aboulabas, and next to him to his brother Abdela, and next to the latter to Ise Ibinmouse. II They appointed Abdela, son of Alim and brother of Salim, to be commander in Syria; Salim himself to be commander in Egypt; while Abdela, brother of Aboulabas (from whom he received the nomination to the command) they appointed over Mesopotamia. Aboulabas himself, who was in supreme authority, established his seat in Persia, the government and all the seized treasure (which Marouam had carried away) having been transferred to him and his Persian allies from Damascus. Marouam's surviving sons and relatives went from Egypt to Africa, whence they crossed the narrow sea that separates Libya from Europe next to the Ocean at a place called Septai and settled until this day in Spain of Europe, where some kinsmen and correligionists of theirs had come to dwell at an earlier time — the latter being descendants of Mauias who had suffered shipwreck there. The devastation in the days of Marouam lasted six years and in the course of it all the prominent cities of Syria lost their walls except Antioch, which he planned to use as a refuge. Innumerable Arabs were also killed by him for he was very cunning in civil matters. He belonged to the heresy of the Epicureans, that is Automatists, an impiety he had imbued from the pagans who dwell at Harran. II On 25 January of the same 3rd indiction a son was born to the emperor Constantine by the daughter of the Chagan of Chazaria and he called him Leo. In the same year there was an earthquake and terrible destruction in Syria, as a result of which some cities were entirely destroyed, others partially so, while others slid down entire, with their walls and houses, from positions on mountains to low-lying plains, a distance of six miles or thereabout. Eyewitnesses affirmed that the ground in Mesopotamia was split along two miles and that out of the chasm was thrown up a different soil, very white and sandy, in the midst of which, they said, there came up an animal like a mule, quite spotless, that spoke in a human voice and announced the incursion of a certain nation from the desert against the Arabs, which indeed came to pass. The next year, in the 4th indiction, on the feast of holy Pentecost the impious emperor Constantine conferred the imperial crown on his son Leo by the hand of the false patriarch Anastasios who shared his views.

Author Text & Language	Date & Location	Earthquake	Translation	Text
Nicephorus I of Constantinople Chronograph Greek	Early 9th Century CE Constantinople	Talking Mule Quake	Mango (1990:140-143)	69. Thereafter a son was born to the emperor, whom he named Leo. At the same time a severe earthquake occurred in Syria, causing enormous damage. For some cities that were there (were completely destroyed and) the ground round about opened up to a great extent, while others suffered this fate but partially. Others were shifted from their high positions and slipped down entire, with their walls and houses, to the plains below, moving a distance of as much as six miles, more or less, from their original situation. Some affirmed they had seen the ground in Mesopotamia (which is near Syria) crack deeply along (a distance) of two miles, and another ground, sandy and very white, thrown up from below; and that along with the latter was cast up a female mule, which proclaimed in a human voice the destruction of the Arabs. A short time thereafter a tribe appeared from the desert beyond and slew many multitudes (of Arabs) without resistance.
Georgios Monachus Chronicle Greek	Last half of 9th Century CE Constantinople	Talking Mule Quake	Jefferson Williams from Patrologia Graeca Volume 100 (1857:946)	English That year there was a powerful earthquake in Syria. Some cities were destroyed - others only partly so. In one place, a village moved with its walls and buildings intact. In Mesopotamia, the earth split three thousand feet and a white sandy soil came out of the chasm. Then an incredible thing - an onager emerged speaking of human affairs and predicted a foreign invasion - which happened a short time later. Latin In Syria vero maximus terrae motus urbes subvertit, quarum aliae omnino, aliae es parte tantum destruciae sunt , aliae ab editis in subjacentes campos, seu a duobus circiter milliariis integrae illaesaeque cum muris ac domibus fuerunt translatae . In Mesopotamia autem terra spatio trium milliariorum ſissa , aliam ebulit alliam arenosamque terram, de cujus medio (res incredibilis !) exortum est bemionium humana voce loquens el praedicens populi incursuin , quod paulo post contigit.
Megas Chronographos (anonymous) inside Chronicon Paschale Greek	mid 9th Century CE ?	Holy Desert Quake	Whitby and Whitby (1989:197-198)	1. In the reign of Copronymus, an earthquake occurred in Palestine and the Jordan and all the Syrian land. And many tens of thousands, innumerable people indeed, are dead, and churches and monasteries are fallen. And at the same time a pestilential disease, starting from Sicily and Calabria and spreading like a fire, crossed to Greece and the islands. ...

Author Text & Language	Date & Location	Earthquake	Translation	Text
George Cedrenus Synopsis Historion Greek	1050's CE Anatolia	Holy Desert Quake	Jefferson Williams from Cedrenus Vol. 2 Becker Edition p. 5 and 7	Page 5 English A.M. 6236 ... there were many earthquakes in various places; in the mountains in the wilderness of Saba, a village was swallowed in the [wilderness] of Saba. Latin Anno mundi 6236 ... magna quoque siccitas fuit et multi terrae motus variis locis; adeoque et montes in solitudine Saba inter se coiverunt, et pagus terra absorptus est. Page 7 English Year 4 - A great comet appeared in Syria. ... Year 6 - There was a great earthquake in Palestine, by the Jordan and in all of Syria on 18 January at the 4th hour. An innumerable multitude perished - thousands. Churches and Monasteries collapsed. The worst was in the wilderness by the Holy City (Jerusalem). Latin Anno 4 in Syria magnus cometa apparuit. ... Anno sexto magnus fuit in Palaestina terrae motus, et ad Iordanem perque universam Syriam, die mensis Ianuarii 18, hora 4, innumenraque hominum perierunt milia, corruerunt templa et monasteria, maxime per solitudinem urbis sanctae.

Author Text & Language	Date & Location	Earthquake	Translation	Text
George Cedrenus Synopsis Historion Greek	1050's CE Anatolia	Talking Mule Quake	Jefferson Williams from Cedrenus Vol. 2 Becker Edition p. 9	English In the ninth year of Constantine, Marnamus was killed in the war with the Abbasids. On 25 January, a son Leo was born Constantine [from his wife] Irena, the daughter of Chazara. At the same time, there was a serious earthquake and terrible destruction in Syria. Some cities were destroyed [and] others partly destroyed. In some place[s?], in the mountains, a village[s?] slid down the mountain for a distance of 6 miles with their houses and buildings intact. Further, in Mesopotamia the earth was split for two thousand steps [~feet] and out of that chasm came a different type of white soil from which a emerged a mule who spoke a prophecy in a human voice - that a nation from the desert would invade the Arab lands. The prophecy came true. Latin Anno Constantini nono Marnamus a Maurophoris, qui et Chrysaro nitae, invaditur, gravissimaque commissa pugna occiditur. die vigesima quinta Ianuarii mensis Constantino ex Chazara Irena filius nascitur, cui Leoni nomen fecit. eodem tempore in Syria gravis terrae motus terri biles edidit ruinas, quibusdam urbibus prorsus, quibusdam ad mediam partem prostratis, nonnullis etiam a montanis in subiectas planities cum muris et aedificiis absque ullo damno traiectis usque ad sex miliaria. porro in Mesopotamia terra in longum ad duo milia passuum rupta est, exque eius imo terra albissima atque arenosa egesta, de cuius medio animal muli forma adscendit, humana voce loquens et praedicens popu lan quendam e solitudine in Arabas incursionem facturum. quod et sic evenit.
Anonymous ? Minor Chronicles Greek	? ?	Holy Desert Quake	Jefferson Williams from German translation by Schreiner (1979:87)	English 747 Jan 18 - Earthquake in Palestine German 747 Jan 18 - Erdbeben in Palästina Note : Date provided by Schreiner is questionable as it may have been derived from Theophanes – see Schreiner (1979:87 n. 57)

Author Text & Language	Date & Location	Earthquake	Translation	Text
Joannes Zonaras Annales Greek	12th century CE Constantinople	Holy Desert Quake	Jefferson Williams from Rodriguez (2006:329) critical edition of an Aragonese version	English On the 23th of September, there was a powerful earthquake where many homes and churches were destroyed. During that same time an ancient temple built by the elinios (?) collapsed - a great and well made building. In front of it, the magnificent Church of Nicea of the Holy Fathers collapsed. Afterwards in May, a sign appeared in the sky looking like a star of the tail(?) of the sun, what the Greeks call a comet; (f. 154d/Zon.XVIII 9 D) Aragonese a los XXIII días del mes de setiembre, fue feito un gran terremoto mui terrible por el cual muitas eglesias e cassas se derrocaron. En el cual tempo se derrocó un templo antigo, el cual fue edificado de los elinios1845, muit grant e bien obrado. Encara aquel día mesmo se derrocó la maravillosa eglesia de Nicea de los Santos Padres. E aprés en el mes1846 de mayo parexió un senyal en el cielo en manera de estrella de çaga del sol, que se clama en griego comiti; ... (f. 154d/Zon.XVIII 9 D)
Michael Glycas Chronicle Greek	2nd half of the 12th century CE Constantinople	Talking Mule Quake	Jefferson Williams from Patrologia Graeca Vol. 158 - Migne (1866)	English the land split in Mesopotamia and a mule came out speaking of the affairs of men and predicted invasion by a foreign army. Latin Cumque terra dehisceret in Mesopotamia, mulus exiit, humanaque voce secutoros hostium incursus denuntiavit.

Author Text & Language	Date & Location	Earthquake	Translation	Text
Pseudo-Dionysius of Tell-Mahre NOT the same person as Dionysius of Tell-Mahre Chronicle of Zuqnin (aka Annales Part IV) Syriac	between 750 and 775 CE Zuqnin Monastery (near Diyarbakir, Turkey)	Talking Mule Quake	Harrak (1999:177-178)	[747-748] The year one thousand and fifty nine: A powerful and terrible earthquake took place in the Western region: The earth is utterly broken apart, the earth is split open, the earth is shaken violently. The earth staggers like a drunkard and sways like a shack. The earth shall shake violently, the earth shall move exceedingly, and it shall swing like a hut. The iniquities, sins and evil doings that are done by us everyday bring about these things, similar ones, and others which are much worse. Where can we show the causes of the earthquakes if these were not brought on by the sins of people? Is it the case that the earth becomes feable, and then, when she quakes and quivers, does she call upon her Maker to come and strengthen her? I do not believe so! But that she cries for help as she quakes, it is because of the wicked deeds that are on her, as she clearly indicated once in the following event. A tremor took place during the night, and something like the noise of a roaring bull was heard from a great distance. When the morning came, the bishop emphatically ordered that all must gather and go out for prayer, saying that this happened because of sins. When everyone came to the prayer, they went out of the city altogether to a shrine called Church of the Mother of God, which was located outside the city of Mabbug in the West. Those people were also Chalcedonians and their bishop marched before them. When they arrived, they all went inside the shrine like goats inside the fold. As they cried out together in prayer, a tremor suddenly occurred. The church collapsed on them, crushing them to death, along with their bishop. None came out alive; all were abruptly crushed in fatal and horrifying fashion, as if in a wine-press. The righteous perished alongside the sinner.

Author Text & Language	Date & Location	Earthquake	Translation	Text
Elias of Nisibis Chronography Syriac with some parts written or duplicated in Arabic	Early 11th century CE Nusaybin, Turkey	probably Talking Mule Quake	Jefferson Williams from a French translation by Delaporte (1910:105)	Year 131 [A.H.] Begins on Friday 30 Ab of the year 1059 of the Greeks [30 August 748 AD] A year in which there were many earthquakes; many places ruined; a valley [located] near Mount Tabor was transported from its place to 4 miles with its houses and properties, without a single grain of dust falling from its houses, and without either a man nor an animal dying , or even a hen [sic]. In which the Church of the Jacobites, at Mabbug, collapsed on a Sunday at the time of the Mass and many people perished there (Kuwarazmi'. - Daniel the Jacobite).

Author Text & Language	Date & Location	Earthquake	Translation	Text
Michael the Syrian Chronicle Syriac	late 12th century CE probably at the Monastery of Mar Bar Sauma near Tegenkar, Turkey	Holy Desert Quake, Talking Mule Quake, and an unrelated earthquake in Constantinople	Jefferson Williams from a French translation by Chabot (1899-1910:vol.2 Book XI Ch. XII, 509-510)	Meanwhile there was an earthquake at Damascus which lasted for days and shook her like leaves on trees. In Beit Qoubayê (?), there was a fortress that had been built at great expense by Al-Hajjaj ibn Yusuf. It was overthrown from top to bottom and more than 80 people suffocated inside. Many in the city itself perished. Myriads of people died in Ghautah and Dareya. Bosrah, Nawa, Der'at, and Ba'albek were swallowed up completely . The water in the springs of Baalbek turned to blood. It returned to normal after much prayer and repentance by the townsfolk. There was an extraordinary storm in the Sea. Its waves rose to the sky. The waves surged with a terrifying and horrid noise like a cauldron boiling from the flames of a fire. The sea overflowed and breached its banks destroying many towns and villages on its shores. In the land of Balqa, that is to say Moab, there was a fortress on the shore of the sea, where the Yemenite Taiyayê tribe lived. It was struck by the sea's waves, the foundations were torn out, and it was deposited three miles away. This earthquake destroyed the city of Tiberius except for house of a man named 'Isa. It overthrew thirty synagogues and wonderful natural things. The thermal baths - that wonderful building - built by Solomon the son of David, collapsed and was destroyed. There was a spring with purgative water and amazing constructions above it, surrounded by hotels (inns) for the sick who sought to be healed. There were clay pots artistically made and arranged. On each pot was written how many times it purged the bowels of those who drank from it. Each person chose a pot according to how much they wanted to drink. All these buildings are gone. A village near Mount Tabor moved four miles from its place with all its homes and buildings intact. Neither a stone nor a small mud brick fell. Nor did [467] any person or animal die - not even a chicken! The spring next to Jericho moved six miles from its original location. In Mabboug, the quake struck during mass. People and animals died because the great churches and walls collapsed. In Constantinople, the statues of the emperors fell as well as most of the buildings. The same thing happened in Nicaea and in the other cities. Around this time, Const[antinus] drove out Germanus, their patriarch, from the church, and installed Anasta[si]us.

Author Text & Language	Date & Location	Earthquake	Translation	Text
Anonymous Chronicon Ad Annum 1234 Syriac	beginning of the 13th century CE possibly in Edessa (Sanliurfa, Turkey) or the Monastery of Mar Bar Sauma near Tegenkar, Turkey	Holy Desert Quake and Talking Mule Quake	First two sentences is from Ambraseys (2009). The rest is from Hoyland (2011:271 – 273)	On the insurrections and ruin which happened at this time in the West, and the fall of the city of Mabbug. For in the year 1060 of the Greeks, 134 of the Arabs, great upheaval afflicted the world . . . There was at Damascus and the whole of its region an earthquake which lasted for days and which shook the city and made it quiver. At Beth Qubayeh there was a palace built by Hajjaj ibn Yusuf, on which he had lavished much care and expense; it collapsed from top to bottom and more than 800 persons were fell and were buried in it. In the city itself many perished. In the Ghuta and Darayya innumerable people died in this earthquake. Bostra, Nawa were entirely swallowed up. At Baalbek much of it collapsed and the sources of water became as though blood were in them. In the sea there was an extraordinary and unusual storm such that its waves reached so it seemed to the sky and its foam boiled like a cauldron on the fire, making a terrifying and fearful noise. It gushed forth and surpassed its usual limits, destroying many villages on the coast. Many other things are narrated which, if recorded, would make much work for their writer and the reader. In the region of the Balqa', that is, Moab, there was a palace situated on the sea: inhabited by Yemeni Arabs, which was struck by the waves of the sea, uprooted from its foundations and flung three miles away. This earthquake destroyed the city of Tiberias, except for the villa of a man named `Isa Galba. It knocked down thirty synagogues of the Jews and some wonderful natural sites there. The baths, a fine structure erected by Solomon the King collapsed and fell down. There was there a healing spring given by God for the health of men, above which marvellous buildings had been erected and all around it was everything necessary for the use of those who came in search of a purge. They say that placed there were earthen jugs skillfully arranged, on each one of which was written how many times it flushed the stomach of the one who drank it. Thus each person chose a jug according to how much he desired to be purged. All those buildings have now been destroyed and expunged. Near Mount Tabor a village was moved and transported four miles, along with its houses and contents, without a stone or a piece of plaster falling from its buildings and without a man or beast dying, not even a hen. The spring of water next to Jericho, the one on which were built palaces, gardens and mills by Sulayman ibn 'Abd al-Malik, remained in place, but the river from which it arose was transported and moved six miles away from its place where it had been flowing. All the structures which Sulayman had erected on this river were thus destroyed. At Mabbug there was destruction everywhere and many people perished as a result of it. At its church, at the time of the sacrifice of our Lord, while the priest was standing with his hands held over the offering, suddenly perdition struck them; it (the church) fell down and they were unable to get out of the holy building and all who were in it were trampled and destroyed, priests as well as lay people. Instead of hymns and spiritual psalms, sighs and lamentations were heard throughout the city. Also the walls collapsed down to their foundations. When these things had come to pass, and even greater things, men still did not refrain from wicked and impious deeds. The affairs of the church were particularly troubled at this time. For this reason people were crushed by much affliction: heavy taxes, poor harvests, wars and shedding of blood in all regions

Author Text & Language	Date & Location	Earthquake	Translation	Text
Agapius of Menbij Book of History Arabic	10th century CE Manbij, Northern Syria	Holy Desert Quake	Vasilev (1909)	In the month of Kanoun II (January), there was a violent earthquake on the coast of the sea of Palestine. Many places were devastated, and many people perished, especially in Tiberias, where more than 100,000 men succumbed.
Severus ibn al-Muqaffa' History of the Patriarchs of Alexandria Arabic translation of an earlier Coptic Biography	10th century CE al-Muqaffa' likely wrote in Hermopolis, Egypt (near el Ashmunein, Egypt). The Coptic text he translated appears to have been written in the Nile Delta - possibly in Alexandria, Egypt	Holy Desert Quake	Evetts (1910:139-140)	Then we returned to Misr [i.e. Egypt] on the night of the 21st of Tuba, the night on which our Lady, the Virgin Mary, went to her rest. And that night there came great wrath from God, for there was a great earthquake in the land, and many houses were ruined in all the cities, and none was saved from them, not a single soul, and likewise on the sea many ships were sunk on that night. This happened all over the East, from the city of Gaza to the furthest extremity of Persia. And they counted the cities that were wrecked that night, and they were six hundred cities and villages, with a vast destruction of men and beasts. But the land of Egypt was uninjured, except only Damietta. And at Misr there was only great fear, without any death or ruin of houses; for though the beams in the doorways and walls were moved out of their places, they went back again to their places after two hours. We were assured by one whose word we trust that none of the churches of the Orthodox nor of their dwellings was destroyed throughout the east.
George al-Makin The Blessed Collection Arabic	1262-1268 CE Damascus - possibly also written in Cairo	Holy Desert Quake	Ambraseys (2009)	(a.460 Diocl. = 17 January 744) ... on the 21st Tuba [17 January 744] a great earthquake [occurred] which ruined several cities and caused a sizable number of people to die under the ruins, and a number of ships perished. It is said that this was a cosmic earthquake, affecting all countries, as far as the East where 100 cities were overturned on that day and so many men and beasts killed. (a. H. 120) And then there was great upheaval in Egypt on 21st Tuba [16 January], when a great earthquake during the night destroyed many cities, the inhabitants perishing under the ruins; and many ships were engulfed in the sea. And they say that this was a cosmic earthquake, affecting all regions, out to the Far East; and on the same night 600 cities in the East were uprooted, and men and innumerable animals were wiped out.

Author Text & Language	Date & Location	Earthquake	Translation	Text
Ibn al-Rahib or anonymous Chronicon Orientale Arabic	13th century CE Cairo	Holy Desert Quake	Jefferson Williams from a Latin translation from the original Arabic by Cheiko (1903:134)	English That night God showed his wrath and there was a terrible earthquake. Many cities collapsed. Not even one escaped destruction. Many ships sank on the same night. The earthquake shock made the timbers of the gates and walls come out of their place. This calamity occurred in the east during the reign of Merwan. It was discovered that 600 forts, towns, and cities were razed to the ground and an innumerable number of man and beast perished. Latin Porro ea nocte furorem suum Deus ostendit, contigitque horribilis terraemotus, quo multae urbes corruerunt, nec vel unus e ruina evasit: multae praeterea naves eadem nocte submersae sunt:eaque fuit terraemotus quassatio, ut ligna portarum et parietum e suo loco prodirent.Quae quidem calamitas accidit in Oriente in toto Meruani Imperio. Recensitis autem, quae ea nocte per Orientem diruta fuerunt, locis, deprehensum est, sexcenta fuisse castella, oppida et urbes, numerumque hominum ac iumentorum infinitum interiisse.
Mekhitar of Airavanq Mekhitar d'Airavanq chronicle Armenian	13th century CE Monastery of Geghard			Karcz (2004:783), citing Brosset (1869), reports that this chronicle mentions an earthquake in 751 CE.

Author Text & Language	Date & Location	Earthquake	Translation	Text
Anonymous Ra'ash shvi'it (רעש שביעית) Hebrew	difficult to date ?	Holy Desert Quake	excerpts provided by Raban (1989:10) and Karcz (2004)	Multitudes drowned violently those dwellers in the Shefela [coastal lowlands of Israel] and in the Sharon valley A current appeared Women and children were drowned along with preachers of the Bible and Mishna ... rage in fear and dark chaos will capital Tiberias in wrath and anger sunk crowds in plains in Sharon Valley I heard how disaster befell the city and the old and young in it have perished
Anonymous Book of Prayers from the Cairo Geniza Hebrew	10-11th century CE ?	Holy Desert Quake	excerpt provided by Karcz (2004)	On 23 Shevat a fast to the Land of Israel, since the land trembled and many cities fell and sages and pious and the just and the [etc.]... died under the ruins. And it is referred to in texts 'in wrath the earth will pace ahead' and since destruction of Jerusalem to the date it happened in Land of Israel the count of in wrath.
Abu l'Fath Annals (Kitab al-Ta'rikh) Arabic	1355 CE ?	Holy Desert Quake and possibly Talking Mule Quake as well	excerpt provided by Karcz (2004) from a translation by Samaritan Scholar Paul Stenhouse	In the days of Marwan an extraordinarily powerful earthquake struck everywhere. Houses collapsed on their inhabitants and untold numbers of people perished. It was a terrible earthquake that had no precedent. Those who survived it stayed out in the open for many days while the earth was still shaking underneath them.

Author Text & Language	Date & Location	Earthquake	Translation	Text
Anonymous ? Chronicle Adler Arabic ?	? ?	Holy Desert Quake and possibly Talking Mule Quake as well	Jefferson Williams from French translation by Adler and Seligsohn (1902:243)	In the time of Merwan a great earthquake, never was it so terrible.
Al-Masudi Meadows of Gold and Mines of Gems Arabic	~950 CE Egypt	Holy Desert Quake and a second earthquake	Lunde and Stone (1989:389)	The following story originates from Muhammad ibn Ali al-Misri, the historian and native of Khurasan, who was an intimate of Qahir: … It was Mahdi who rebuilt the mosque at Mecca and that of the Prophet at Medina in the form they stand today, and he rebuilt Jerusalem, which had been devastated by earthquakes.
al-Maqdisi Description of Syria including Palestine Arabic	ca. 985 CE Jerusalem ?	Holy Desert Quake	Le Strange (1887:41)	But in the days of the Abbasides occurred the earthquakes which threw down most of the main building; all, in fact, except that portion round the Mihrab. Now when the Khalifa of that day obtained news of this, he enquired and learned that the sum at that time in the treasury would in no wise suffice to restore the mosque. So he wrote to the Governors of the Provinces and to other Commanders, that each should undertake the building of a colonnade.
Sibt ibn al-Jawzi Mirror of time in histories of the notables Arabic	13th century CE Damascus	Holy Desert Quake		
Ibn Nazif al-Hamawi Al-Tarikh al-Mansouri Arabic	Early 1230s CE Homs, Syria ?	Holy Desert Quake and/or Talking Mule Quake	Sbeinati et. al. (2005)	In the year 132 A.H. [20 August 749 CE to 8 August 750 CE] there was an earthquake at Al-Sham.

Author Text & Language	Date & Location	Earthquake	Translation	Text
al-Dhahabi Great History of Islam Arabic	early 14th century CE Damascus	Holy Desert Quake	Ambraseys (2009)	All these events took place at the time of the first earthquake, in the month of Ramadan of 130 [4 May 748 CE - 2 June 748 CE]. God knows best. In that year there was a prodigious earthquake in Sham: we know this from Ibn Jusa, whose source is Muhammad ibn Shaddad ibn Aws al-Ansary, whose source in turn is his grandfather. According to this chain of witnesses it is known that in the year 130 there was the most violent earthquake in Jerusalem. Many of the faithful (Ansars or no) were victims of it. The houses of Shaddad ibn Aws fell on him and his guests; Muhammad ibn Shadda was saved, but he lost his property under the ruins, recovering only the Prophet's sandals. According to another report, Abu Ja'far al-Mansur, the prince of believers, was asked, "O prince of believers, the western and eastern parts of the mosque were damaged during the earthquake of 130: if you would have the damage repaired, that would be very good." The caliph replied that he had no money. Therefore they took off the plates of silver and gold which had covered the doors since the caliphate of Abd al-Malik ibn Marwan and broke it down to the last dinars and drachmas, which financed the rebuilding.
Jamal ad Din Ahmad The Exciter of Desire (for Visitation of the Holy City and Syria) Arabic	1351 CE Jerusalem ?	Holy Desert Quake	Le Strange (1890:92)	On the authority of 'Abd ar Rahman ibn Muhammad ibn Mansur ibn Thabit, from his father, who had it from his father and grandfather. In the days of 'Abd al Malik, all the gates of the mosque were covered with plates of gold and of silver. But in the reign of the Khalif Al Mansur, both the eastern and the western portions of the mosque had fallen down. Then it was reported to the Khalif, saying, “O commander of the faithful, verily the earthquake in the year 130 [11 Sept. 747 CE - 30 Aug. 748 CE] did throw down the eastern part of the mosque and the western part also; now, therefore, do thou give orders to rebuild the same and raise it again.” Khalif replied that as there were no moneys in his treasury, (to supply the lack of coin) they should strip off the plates of gold and of silver that overlaid the gates. So they stripped these off and coined therefrom Dinars and Dirhams, which moneys were expended on the rebuilding of the mosque until it was completed. Then occurred a second earthquake, and the building that Al Mansur had commanded to be built fell to the ground. In the days of the Khalif Al Mahdi, who succeeded him, the mosque was still lying in ruins, which, being reported to him, he commanded them to rebuild the same. And the Khalif said that the mosque had been (of old) too narrow, and of too great length - and (for this reason) it had not been much used by the people — so now (in rebuilding it) they should curtail the length and increase the breadth. Now the restoration of the mosque was completed on the new plan during the days of his Khalifate.

Author Text & Language	Date & Location	Earthquake	Translation	Text
Ibn Tagri Birdi The shining stars in the kings of Egypt and Cairo Arabic	15th century CE Cairo	Holy Desert Quake	Guidoboni et. al. (1994)	In that year, there was a strong earthquake in Syria which destroyed Jerusalem. The sons of Shaddad ibn Aws died there. The inhabitants were forced to take refuge in the desert, where they stayed for forty days. It is said to have happened in the year 131 [31 Aug. 748 CE - 19 Aug. 749 CE].
Jalal al-Din al-Suyuti Clearing up the Description of Earthquakes Arabic	15th century CE Cairo	Holy Desert Quake	Ambraseys (2009)	A.H. 130 [11 Sept. 747 CE - 30 Aug. 748 CE] In Tadkirat al-Wada'i the following tradition is reported after `Abd-Allah ibn kathir al-Qari who said, “We were victims of an earthquake in Damascus in 130: the inhabitants had left their town; the Dajaj suq [poultry market] fell from the "Great Rocks". Several days after the catastrophe they started to dig through a part of the ruins and then it was that a man was found alive...” A.H. 131 [31 Aug. 748 CE - 19 Aug. 749 CE] [`Abd-Allah ibn kathir al-Qari (Ibn Kathir - ابن كثير) also] said, “I was told that at the time of the catastrophic earthquake of 131, the platform of the mosque opened, allowing the sky to be seen; another earthquake following after this last one closed the gap up again.”

Author Text & Language	Date & Location	Earthquake	Translation	Text
Mujir ad-Din al-'Ulaimi The Glorious History of Jerusalem and Hebron Arabic	ca. 1495 CE Jerusalem	Holy Desert Quake	Ambraseys (2009)	The history of the holy Rock at Jerusalem on the night of the earthquake, according to Abu Umayr who held the Jundub which pertained to Rustum al- Farisi: "At the time when the first earthquake occurred, they requested me to give the call to prayer, and I answered that that was not my business. They asked me the same when the second [earthquake] occurred and I gave the same answer. Come the third earthquake, I was very frightened and I approached the mosque. All the houses had been destroyed. One of the guards of the holy Rock asked me, 'Quick, go and get news of my family and I will tell you the prodigy.' I went to find out and brought him back the news. Then he said to me, 'The dome lifted itself up, [so that] one could see the stars in the sky, and then it settled again. I heard some unknown people giving orders: here, a bit more, since it was not in its correct place." According to another version (that of 'Ubayd Allah ibn Muhammad al-Qaramany), taken from Amr and Rustum himself: "There were ten guards at each gate: when I brought him news of his family, my guard related to me that the dome had been dropped down (depose´), [so] that the stars had been visible, and that before I returned, rustlings had been heard, then a voice saying 'Put it down' three times, and the dome was put back in its place." Al-Walid ibn Hamad gives an account taken from Abd ar-Rahman ibn Muhammad ibn al-Mansur ibn Thabit, who gives the following version passed down from his father and grandfather: "Abu 'Uthman was sounding the evening prayer, after the prayer of Qyam [the breaking of the fast], on the black square. During the evening prayer, he heard the roar of an earthquake, and cries of people's distress across the town. It was a black and cold night, full of rain and wind. He heard a voice (without seeing anyone) which said, "Lift it up gently, in the name of God", and the dome was lifted up so that the stars appeared, and at the same time people felt drops of water on their faces, until the time of the call to prayer. After this the voice said, "Put it down, put it in place, in the name of God." And the dome returned to its place."

Author Text & Language	Date & Location	Earthquake	Translation	Text
Mujir ad-Din al-'Ulaimi The Glorious History of Jerusalem and Hebron Arabic	ca. 1495 CE Jerusalem	Holy Desert Quake and another earthquake some years later	Jefferson Williams from a French Translation by Sauvaire (1876:59-60)	English Abd-er-Rahman ibn Mohammad ibn Mansoûr ibn Tàbet reported from his father who reports from his grandfather that all the doors [of Al-Aqsa Mosque] were covered with gold and silver plates up to the time of Abd-el-Malek. Now, when the Abbasid Abu-Dja'far El-Mansoûr came, the eastern and western parts of the mosque had fallen. He said [to the Caliph]: "Commander of the Believers, the eastern and western parts of the mosque were overthrown by the earthquake in the year 130. If you gave the order to rebuild this Mosque and restore it, I do not have the money [to do so]." Then he [the Caliph] ordered him to tear off the gold and silver plates which covered the doors. They were torn off and they made dinars and dirhams which were used for the expenses of the reconstruction until it was completed." The caliphate of El-Mansoùr began in the year 136. He was the second caliph of the Abbasids who built Baghdad. Construction started in the year 145. He [El-Mansoùr] died on Saturday the 6th of the month of Dhu l'Hijja, year 158 (AD October 7, 775), at the age of fifty-eight years and was buried in Mecca. Some time later the second earthquake struck and overturned the buildings executed by the order of Abu-Dja'far. Subsequent to this time, that is to say after the death of the Caliph, [the new Caliph] El-Mahdy came and with the constructions in ruins, the state of things was explained to him. He ordered repairs saying: "This Mosque is narrow and long and empty of followers. Decrease the length and make it wider." The building was completed under his caliphate. His full name is Abu-'Abd-Allah Mohammad, son of Abd-Allah El-Mansoûr, and his honorary nickname is El-Mahdy. French 'Abd-er-Rahman ebn Mohammad ebn Mansoûr ebn Tàbet a rapporté d'après son père qui le tenait de son aïeul, que toutes les portes étaient revêtues de plaques d'or et d'argent à l'époque d' 'Abd-el-Malek. Or, lorsque vint Abou-Dja'far El-Mansoûr. l'Abbâsîde, les parties orientale et occidentale du Masdjed étaient tombées : « Com- mandeur des Croyants, lui dit-on_, les parties orientale et occidentale du Masdjed ont été renversées par le tremblement de terre, en l'année 130; si tu donnais l'ordre de reconstruire ce Masdjed et de le restaurer ? — Je n'ai pas d'argent, » répondit-il. Puis, il ordonna d'arracher les plaques d'or et d'argent qui recouvraient les portes. Elles furent arrachées, et on en fabriqua des dinars et des derhems qui servirent aux dépenses de la reconstruction, jusqu'à ce que celle-ci fut achevée. Le khalifat d'El-Mansoùr commença en l'année 136. Deuxième khalife des 'Abbâsides, c'est lui qui construisit Baghdàd; la construction en fut commencée l'an 145. Il mourut le samedi 6 du mois de dou'l heddjeh, l'année 158 (7 octobre 775 de J.-C.), à l'âge de cinquante-huit ans, et fut enterré à la Mekke. Quelque temps après eut lieu le second tremblement de terre qui renversa les constructions exécutées par l'ordre d'Abou-Dja'far. Postérieurement à cette époque, c'est-à-dire après la mort du khalife, El-Mahdy étant venu et ces constructions se trouvant en ruines, on lui exposa l'état des choses: il ordonna de faire les réparations, en disant: « Ce Masdjed est étroit et long, et vide de fidèles; diminuez-en la longueur et faites-le plus large. » La bâtisse fut achevée sous son khalifat. Son nom entier est Abou-'Abd-Allah Mohammad, fils d' 'Abd-Allah El-Mansoûr, et son surnom honorifique El-Mahdy.

Supplemental Appendix E– Textual accounts – By No Means Mild Earthquake(s)

Master Seismic Effects – By No Means Mild Earthquake(s)

Location	Description	Sources	Comments
Khabur River, Jazira	Three villages collapsed – many people perished	Pseudo-Dionysius of Tell-Mahre	3 March 756 CE
Unspecified	Many other places destroyed	Pseudo-Dionysius of Tell-Mahre	3 March 756 CE
Palestine & Syria	Considerable (by no means mild) earthquake	Theophanes	9 March 756 CE - Geographic considerations indicate that this could represent a second earthquake in a By No Means Mild earthquake sequence
Massisah (Mopsuestia, Turkey)	partially destroyed by earthquake	Le Strange (1905:130-131) – sources not cited	Earthquake was dated to A.H. 139 (5 June 756 CE - 24 May 757 CE), after the March 756 CE dates of Pseudo-Dionysius of Tell-Mahre and Theophanes. Possibly an aftershock or possibly the By No Means Mild Quake but misdated by Le Strange's (1905:130-131) mysterious source.
Massisah (Mopsuestia, Turkey)	suburb of the city suffered from an earthquake	Ibn al-Adim (aka Kemal ad-Din) as cited in Blochet (1895;46 n.3)	Earthquake was dated to A.H. 140 (25 May 757 CE - 13 May 758 CE), after the March 756 CE date of Pseudo-Dionysius of Tell-Mahre and Theophanes. Appears to be the same earthquake recounted by Le Strange.
Al Aqsa Mosque, Jerusalem	destroyed	al-Maqdisi, Al-Dhahabi, Jamal ad Din Ahmad, Mujir ad-Din	Date of seismic destruction of Al Aqsa Mosque a second time is loosely defined to before 785 CE.

Textual Accounts – By No Means Mild Earthquake(s)

Author Text & Language	Date & Location	Earthquake	Translation	Text
Pseudo-Dionysius of Tell-Mahre NOT the same person as Dionysius of Tell-Mahre Chronicle of Zuqnin (aka Annales Part IV) Syriac	between 750 and 775 CE Zuqnin Monastery (near Diyarbakir, Turkey)	By No Means Mild Quake	Harrak (1999:197)	755-756 The year one thousand and sixty-seven: In the month of Adar (March), on the third day — a Tuesday — a powerful, terrible and dreadful earthquake took place in the middle of the night in the land of the Jazira. Three villages on the Khabur collapsed, and many people perished inside them, like grapes in a wine press. Many other places were also destroyed by this earthquake, brought on by the great number of our sins: The earth shall totter exceedingly, the earth shall shake violently, and it shall sway like a hut. This is what our sins are able to do: to shake the ground beneath us!
Theophanes Chronicle Greek	810-815 CE Constantinople	By No Means Mild Quake	Mango and Scott (1997:594-595)	[A.M. 6248, AD 755/6] Constantine, 16th year Abdelas, 2nd year Paul, 2nd year Constantine, 3rd year In this year, on 9 March, there occurred a considerable earthquake in Palestine and Syria. Theodore [I], patriarch of Antioch, was exiled because of the malice of the Arabs, having been accused of frequently communicating Arab affairs by letter to the emperor Constantine. And so, Salim himself banished him to the land of Moab which was his native country. The same Salim decreed that no new churches should be built, that crosses should not be displayed and that Christians should not discourse with Arabs on matters of religion. He invaded the Roman country with a force of 80,000 and, when he had come to Cappadocia, he heard that Constantine was taking up arms against him. Taking fright, he returned empty-handed without causing any damage, except that he took a few Armenians who had joined him.

Author Text & Language	Date & Location	Earthqua ke	Translation	Text
? ? Arabic	? ?	By No Means Mild Quake	Le Strange (1905:130- 131) - Le Strange did not cite his source(s)	Al-Massisah lies on the Nahr Jayhan (the river Pyramus). It was conquered by 'Abd-Allah, son of the Omayyad Caliph 'Abd-al- Malik, in the 1st (7th) century, who rebuilt its fortifications and established a strong garrison here. A mosque was erected on the summit of the hill, and the church in the fortress was turned into a granary. A suburb or second town was built shortly afterwards on the other bank of the Jayhan, called Kafarbayya, where the Caliph Omar II founded a second mosque and dug a great cistern. A third quarter, lying to the east of the Jayhan, was built by the last Omayyad Caliph Marwan II, and named Al-Khusus ; he surrounded it by a wall with a ditch, and wooden doors closed its gateways. Under the Abbasids the Caliph Mansur turned an ancient temple into a Friday Mosque, making it thrice as large as the older mosque of Omar II. Harun-ar-Rashid rebuilt Kafar-bayya, and its mosque was further enlarged by Mamun. The two quarters of Kafarbayya, and Massisah proper were connected by a stone bridge across the Jayhan ; the town bore the title of Al-Ma'muriyah, 'the Populous,' or 'Well-built,' said to have been bestowed upon it by the Caliph Mansur, who restored Massisah after it had been partially destroyed by earthquake in [A.H.] 139 [5 June 756 CE - 24 May 757 CE]. At a later date Massisah, like its neighbours, passed into the possession of the kings of Little Armenia.
Ibn al-Athir The Complete History Arabic	1231 CE Mosul ?	By No Means Mild Quake	Characteriza tion by Taher (1996),	According to Taher (1996), Ibn al-Athir reports earthquakes in al-Massîsa (Mopsuestia) in A.H.140 (25 May 757 - 13 May 758 CE). According to Ibn al-Athir, the surrounding wall was weakened. Reconstruction of the wall and construction of a large mosque was ordered by Caliph al-Mansûr.

Author Text & Language	Date & Location	Earthquake	Translation	Text
Ibn al-Adim (aka Kemal ad-Din) The Cream of the History of Aleppo Arabic	Before 1260 CE Aleppo or Cairo	By No Means Mild Quake	Jefferson Williams from a French translation by Blochet (1895;46 n.3)	English Masisah. Malmistra according to Latin writers; in Armenian Msis. According to The Description of Aleppo (ms. ar. 1683, fol. 67 r.): “this name includes two towns; between the two flows the Djihân river, the western city is Masisah, the eastern city Kafr-bîà, it was called the little Baghdad (Baghdâd as-Soghrâ)” Ibn abi-la'koûb said:” It was built by al-Mansoûr during his caliphate. It was a simple post before him. Al-Mamoûn builds Kafr-bîà; the Djihân river flows between the two places; on this stream there is an old bridge, large and built in stone.” According to the same author, the citadel of Masisah was built during the reign of Abd al-Malik ibn-Marwân; there was a church that 'Omar ibn' Abd al-'Azîz destroyed. This person had the mosque djâmi built for the locals in the vicinity of Kafr-bîâ. Hishâm ibn 'Abd al-Malik built the suburb of the city that suffered from the earthquake of the year A.H. 140 [25 May 757 CE - 13 May 758 CE]. We still cite al-Mansoûr and al-Mahdî as the builders of this city ; ar-Rashîd built a ditch there. It was taken from the Muslims in 354 of the Hegira by the takafoûr. French Masisah. La Malmistra des écrivains latins ; en arménien Msis. Suivant la Description d'Alep (ms. ar. 1683, fol. 67 r.): ce nom comprend deux villes ; entre les deux coule le fleuve Djîhan, la ville occidentale est Masîsah, la ville orientale Kafr-bîà, on l'appelait la petite Bagdad (Baghdâd as-Soghrâ). Ibn abi-la'koûb dît : Elle fut construite par al-Mansoûr durant son khalifat. C'était avant lui un simple poste. Al-Mamoûn bâtit Kafr-bîà ; le fleuve Djihân coule entre les deux places ; sur ce cours d'eau il y a un pont ancien, grand et bâti en pierres. Suivant le même auteur, la citadelle de Masîsah fut bâtie sous le règne d' 'Abd al-Malik ibn-Marwân ; il y avait une église qu' 'Omar ibn 'Abd al-'Azîz détruisit. Ce personnage fit construire une mosquée djâmi' pour les gens du pays dans les environs de Kafr-bîâ. Hishâm ibn 'Abd al-Malik construisit le faubourg de la ville qui souffrit du tremblement de terre de l'an 140. On cite encore al-Mansoûr et al-Mahdî comme constructeurs de cette ville ; ar-Rashîd y construisit un fossé. Elle fut prise aux Musulmans en 354 de l'hégire par le takafoûr

Supplemental Appendix F – Calendars

Several Ancient Calendars were employed by the various authors who wrote about these earthquakes. These calendars are summarized below. An online calendar converter can be found at CHRONOS (https://deadseaquake.info/EarthquakeCatalogOfTheDeadSea/Chronos/)

Julian Calendar – The Julian Calendar is a solar calendar proposed by Julius Caesar and standardized by Augustus. It was modeled on the ancient Egyptian civil calendar. A normal Julian year has 365 days while leap years, which occur every 4 years, add an additional day to the month of February. No other intercalations are made. Starting in 8 CE, a leap year in the Julian calendar can be determined by dividing the year by 4. If there is no remainder, it is a leap year. 1 January marks the start of a Julian year. By convention, dates before the Gregorian Calendar reform of 1582 CE are reported in the Julian Calendar. This is the standard used here. A Julian day begins at midnight.

A.M. – Anno Mundi. This calendar was used by several of the Byzantine authors including Theophanes, Anastasius Bibliothecarius, and Cedrenus. The calendar is based on the Julian calendar however the year does not begin on 1 January and the starting day, month, and year of this calendar was a point of contention as it was based on an estimate for the start of "creation" (among other things[6]) as interpreted through the Septuagint - a Greek translation of the Old Testament. An ongoing several hundred year long theological debate over when Biblical "creation" began led to multiple versions of the A.M. calendar. The earlier Byzantine sources used the Alexandrian version ($A.M._{a}$) or “Alexandrian era” of this calendar which has a starting date of 25 March 5492 BCE or, according to Bickerman (1980), 25 March 5493 BCE. Earthquake catalogers Guidoboni et. al. (1994) and Ambraseys (2009) assume a starting date of 25 March 5492 BCE and that is what is used here. As explained by Grumel (1958:219), “the Alexandrian era of Panodorus began in 5493 BCE [and] the Alexandrian era of Annianos began in 5492 BCE. The Alexandrian Era of Annianos is what is commonly called the Alexandrian era." Another reckoning system is the Byzantine version ($A.M._{Byz}$) which has a starting date of 1 September 5509 BCE (Bickerman, 1980:73-74). Whenever possible, the specific reckoning system is indicated by making use of subscripts – such as $A.M._{a}$ or $A.M._{Byz}$. In the Anno Mundi calendar system used by the Byzantine authors, the day followed the Roman civil custom of beginning the calendarical day at midnight (*nychthemeron*). When hours are indicated they mark time since dawn. Hence, if daybreak began at 6 am, the 4th hour would correspond to 10 am (Rautman, 2007:3).

Indictions - An indiction (Latin: indictio, impost) was a periodic reassessment of taxation in the Roman Empire which took place every fifteen years. In Late Antiquity, this 15-year cycle began to be used to date documents. Indictions refer to an individual year in the 15 year cycle. For example, "the fourth indiction" came to mean the fourth year of the current indiction. Since the cycles themselves were not numbered, other information is needed to identify the specific year. When an ancient author supplies an indiction along with an A.M. date, the result may be greater chronological precision. For our dating purposes, indictions began in 312 CE when they were introduced by the Roman Emperor Constantine. The indiction was first used to date documents unrelated to tax collection in the mid-fourth century. By the late fourth century it was being used to date documents throughout the Mediterranean. In 537 CE, Roman Emperor Justinian decreed that all dates must include the indiction. Outside of Egypt, the year of the indiction generally began on 1 September (Bickerman, 1980:78).

A.H. – Anno Hegirae is also known as the Muslim Calendar or the Islamic lunar calendar. The start date is the *Hijra* - when on Friday 16 July 622 CE, Mohammed and his followers migrated from Mecca to Medina. The calendar consists of 12 alternating months of 30 and 29 days. Although the original calendar determined the start of each month based on astronomical observation of the first visible crescent after a new moon, a fixed tabular calendar was developed in the 8th century CE. In the tabular calendar, a day is added to the final (12th) month during leap years making it 30 days long instead of 29. Leap days are added every 2-3 years in a 30 year cycle which is subject to local variation. The most common distribution is on the 2nd, 5th, 7th, 10th, 13th, 16th, 18th, 21st, 24th, 26th, and 29th year of each 30-year cycle (timeanddate.com). The Islamic day begins at sundown[7].

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[6] e.g. establishing a date for the celebration of Easter. Determining an annual date for Easter is what drove the debate and a continuing effort to refine the Christian calendar.

[7] The ancients did not enjoy the ubiquity of time keeping devices that we have today. Thus two great markers of time were sunrise and sunset. As a general rule, calendars that were lunar or derived from an earlier lunar calendar start their days when the sun sets as this is when one can start to make observations about the phases of the moon. Solar calendars, on the other hand, tend to start their day at sunrise.

Table H-1 - Names of Months in the Muslim Calendar

Month Number	Transliterated	Arabic	Number of days
1	Muharram	ٱلْمُحَرَّم	30
2	Safar	صَفَر	29
3	Rabi'-ul-Aououal	رَبِيع ٱلْأَوَّل	30
4	Rabi'-ut-Tani	رَبِيع ٱلثَّانِي	29
5	Djoumada-l-Oula	جُمَادَىٰ ٱلْأُولَىٰ	30
6	Djoumada-t-Tania	جُمَادَىٰ ٱلثَّانِيَة	29
7	Rajab	رَجَب	30
8	Sha'ban	شَعْبَان	29
9	Ramadan	رَمَضَان	30
10	Chaououal	شَوَّال	29
11	Dou-l-Qa'da	ذُو ٱلْقَعْدَة	30
12	Dou-l-Hijjah	ذُو ٱلْحِجَّة	29 or 30

A.G. – Anno Graecorum is also known as the Seleucid Era, Chaldean, or the Macedonian Calendar[8]. This calendar began at the start of the Seleucid Empire and was assimilated into the Babylonian calendar with Macedonian month-names sometimes substituted for the Babylonian names (Stern, 2013:238). The A.G. calendar uses the same 19 year cycle of intercalations as the Babylonian calendar. A version of the A.G. calendar was used by the Christian Syriac authors Pseudo-Dionysius of Tell Mahre, Elias of Nisibis, and Chronicon Ad Annum 1234. This might have also been the calendar used by the Byzantine author's common source(s). The A.G. calendar has two ways to reckon time. In what is known as the Macedonian reckoning, the A.G. calendar starts in the Autumn 312 BCE with a starting date that eventually got fixed to 1 October 312 BCE. In the Babylonian reckoning, the starting date of the calendar is 2 April 311 BCE[9]. The Syriac writing authors would have likely used the Macedonian reckoning as this was the standard usage among these authors for the Seleucid era (Sebastian Brock, personal communication, 2021 – see also Stern, 2012:236). As the Byzantine source is a matter of conjecture, it is not known what reckoning system or even what calendar they used in their original writings. In the Anno Graecorum calendar system, the day starts at sundown (Sebastian Brock, personal communication, 2022).

Table H-2 - Names of Months in the A.G. calendar used by Syriac Writers and the modern equivalent (Source: Biblehub.com and scriptsource.org)

Month Number	Transliterated	Syriac	Equivalent Month
1	Tishri	ܬܫܪܝ ܩܕܡܝܐ	October
2	Tishri posterior	ܬܫܪܝ ܕܬܪܝܬܝܐ	November
3	Canun prior	ܟܢܘܢ ܩܕܡܝܐ	December
4	Canun posterior	ܟܢܘܢ ܕܬܪܝܬܝܐ	January
5	Shubat	ܫܒܛ	February
6	Adar	ܐܕܪ	March
7	Nisan	ܢܝܣܢ	April
8	Ajar	ܐܝܪ	May
9	Chaziran	ܚܙܝܪܢ	June
10	Tamuz	ܬܡܘܙ	July
11	Ab	ܐܒ	August
12	Elul	ܐܝܠܘܠ	September

[8] A wide variety of localized versions of this calendar also existed throughout the Near East particularly after the breakup of the Seleucid Empire – for example in Gaza, Caesarea, Tyre, Sidon, Baalbek, Antioch, Palmyra, Crete, Cyprus, Bithynia, etc. (Stern, 236 n. 8, 251)

[9] or alternatively 1 or 3 April 311 BCE.

The Coptic Calendar is also known as the Alexandrian Calendar. The Coptic Calendar is coordinated with the Julian Calendar and, since the 4th century CE, used a starting year (Year 1) from 29 August 284 CE to 28 August 285 CE. A year consists of 13 months where the first 12 months have 30 days each followed an epagomenal month which has 5 days during normal years and 6 days during leap years. This version of the Coptic calendar is frequently called the Era of Martyrs and is frequently abbreviated as A.M. (Anno Martyrum). The A.M. abbreviation, however, is not used here as it is reserved for the Anno Mundi Calendar. Coptic Leap Years are coordinated with Julian leap years however the Coptic leap day is added on the last day of the Coptic year rather than on 29 February. If a Coptic year will encompass a Julian Leap year (i.e. a year where there will be a February 29), the Coptic year will start on 30 August instead of 29 August as 29 August in the previous Coptic year will be a leap day. In years such as this, the Coptic day will be a day ahead of the Julian Calendar until 29 February. Thus, for example while 21 Tuba normally corresponds to 16 January, in a Julian Leap Year it will correspond to 17 January. The Coptic day begins at sunrise in the civil calendar and sunset in the liturgical version (Coptic Encyclopedia).

Table H-3 - Names of Months in the Coptic Calendar
(Source: Calendar, Coptic, Claremont Coptic Encyclopedia)

Month Number	Sahadic (Alexandrian)	Boharic (Alexandrian)	Arabic	Julian (normal year)	Julian (leap year)
1	Thoout	Thoout	Tut	29 Aug-27 Sept	30 Aug-28 Sept
2	Paope	Paopi	Babah	28 Sept-27 Oct	29 Sept-28 Oct
3	Hathor	Athor	Hatur	28 Oct-26 Nov	29 Oct-27 Nov
4	Kolahk	Choiak	Kiyahk	27 Nov-26 Dec	28 Nov-27 Dec
5	Tobe	Tobi	Tuba	27 Dec-25 Jan	28 Dec-26 Jan
6	Mshir	Mechir	Amshir	26 Jan-24 Feb	27 Jan-25 Feb
7	Paremhotep	Phamenoth	Baramhat	25-28 Feb & 1-26 March	26-29 Feb & 1-26 March
8	Parmoute	Pharmouthi	Baramudah	27 March-25 April	27 March-25 April
9	Pashons	Pachon	Bashans	26 April-25 May	26 April-25 May
10	Paone	Paoni	Ba'unah	26 May-24 June	26 May-24 June
11	Epep	Epep	Abib	25 June-24 July	25 June-24 July
12	Mesore	Mesore	Misra	25 July-23 Aug	25 July-23 Aug
Epagomene	no name	Pikougi enabot	al-Nasi	24-28 Aug	24-29 Aug

The Hebrew Calendar is also known as the Jewish Calendar or *Haluah Halvri* (הַלּוּחַ הָעִבְרִי) in Hebrew. The Hebrew Calendar is a lunisolar calendar influenced by the Ancient Babylonian Calendar which has undergone revisions over time. Initially, this calendar was based on sightings of the first crescent after the new moon. After the destruction of the 2nd temple in 70 CE and throughout the diaspora, the calendar was subject to local variations. By the 4th century CE, a calendar emerged which was increasingly based on predicted lunar cycles[10]. Sometime before the 8th century, a fixed 19 year Metonic cycle of intercalations similar to the Babylonian calendar was adopted and by the early 10th century, the rabbinic calendar had become like the fixed and predictable calendar that is used today (Stern, 2012:334-335). The structure of the Hebrew Calendar is one of 12 months with an additional intercalary month added in years 3, 6, 8, 11, 14, 17, and 19 of the Metonic cycle[11] (Reingold and Dershowitz, 2018:Section 8.1). The modern Hebrew Calendar is also characterized by a change in the start date of the calendar from the destruction of the second Temple in 70 CE to the start of "creation" like the Anno Mundi Calendar of the Byzantines.[12] Calendaric calculations presented here use the modern system. In the Hebrew Calendar, the day begins at sundown.

Table H-4 - The Months of the Hebrew Calendar

Month Number	Hebrew name	Length	Gregorian Equivalent
1	Nisan	30	Mar-Apr
2	Iyar	29	Apr-May
3	Sivan	30	May-Jun
4	Tammuz	29	Jun-Jul
5	Av	30	Jul-Aug
6	Elul	29	Aug-Sep
7	Tishrei	30	Sep-Oct
8	Chesvan or Marcheshvan	29/30*	Oct-Nov
9	Kislev	30/29*	Nov-Dec
10	Tevet	29	Dec-Jan
11	Shevat	30	Jan-Feb
embolismic **	Adar Rishon	30	Feb-Mar
12	Adar ***	29	

* Whether these months have 29 or 30 days is determined by a set of rules meant to keep Rosh ha-Shanah (1 Tishrei) from falling on a Sunday, Wednesday, or a Friday.
** i.e. an intercalated month – known as a 'pregnant' month in Hebrew. This extra month is added during leap years which occur in years 3, 6, 8, 11, 14, 17, and 19 of the 19 year Metonic Cycle.
*** renamed to Adar II (Sheni) during leap years.

[10] This refers to the fixed calendaric rules of Hillel II. How universally this calendar was adopted and how close it was to the modern calendar is apparently a matter of debate among scholars (e.g. see Stern, 2001:Section 4.2.4 on the Hillel Tradition).
[11] along with a complicated set of rules.
[12] But the start date is different. The starting date in the modern Hebrew calendar is 6 October 3761 BCE at 23 hours, 11 minutes, and 20 seconds - assuming the day began at 18 hours. (Stern, 2001:192)

Supplemental Appendix G – Intensity Estimates from Dead Sea Seismites

Intensity Estimates on an MMI Scale were made using two different techniques which are described and presented in semi-algorithmic form. Intensity estimates from Dead Sea seismites[13] presented in this paper are averaged from the two techniques. The two techniques are

1. The method of Heifetz and Wetzler
2. A modified version of the method of Williams.

Technique 1 – Heifetz and Wetzler

Heifetz et. al. (2005) presented a method to predict the nature and thickness of seismite layers in the Dead Sea based on modeling Kelvin-Helmholtz instabilities which Wetzler et. al. (2010) turned into a graph allowing one to estimate local PGA (Peak Ground Acceleration). This graph was updated in Lu et. al. (2020a) for the Holocene Ze 'elim formation and is shown in Figure H-1.

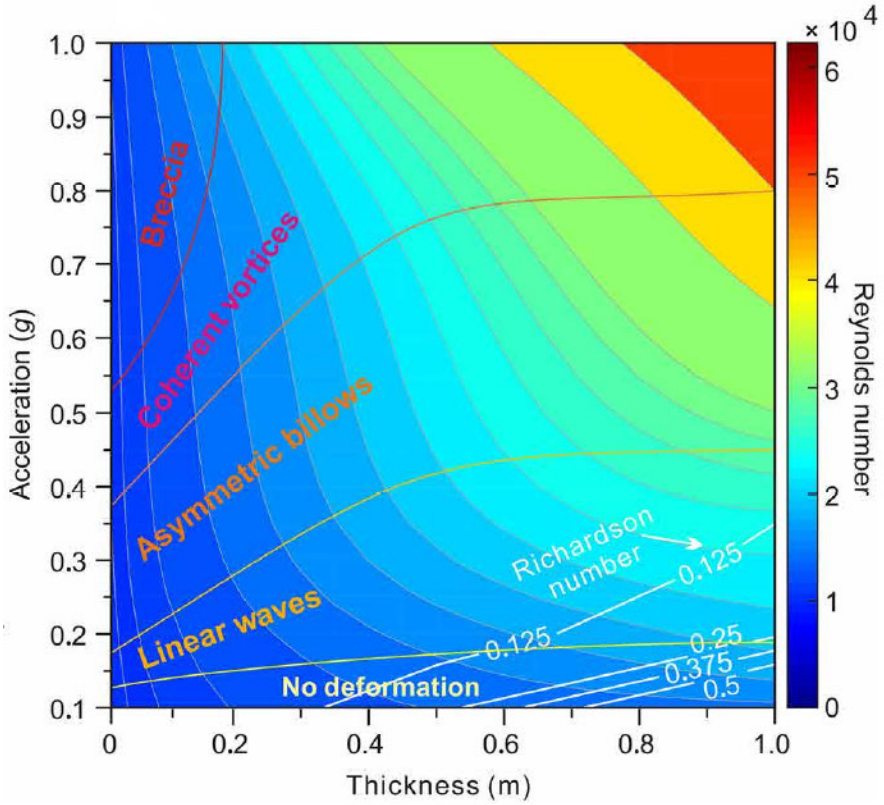

Figure H-1 – Quantitative estimate of accelerations required to create 4 seismite structures of varying thicknesses (from Lu et. al., 2020a - CC BY-NC 4.0)

[13] The term seismite is used here instead of intraclast breccia (defined in Agnon et. al., 2006) as this analysis assumes that the intraclast breccia in question was formed by seismic activity.

The four seismite types are shown in Figure H-2

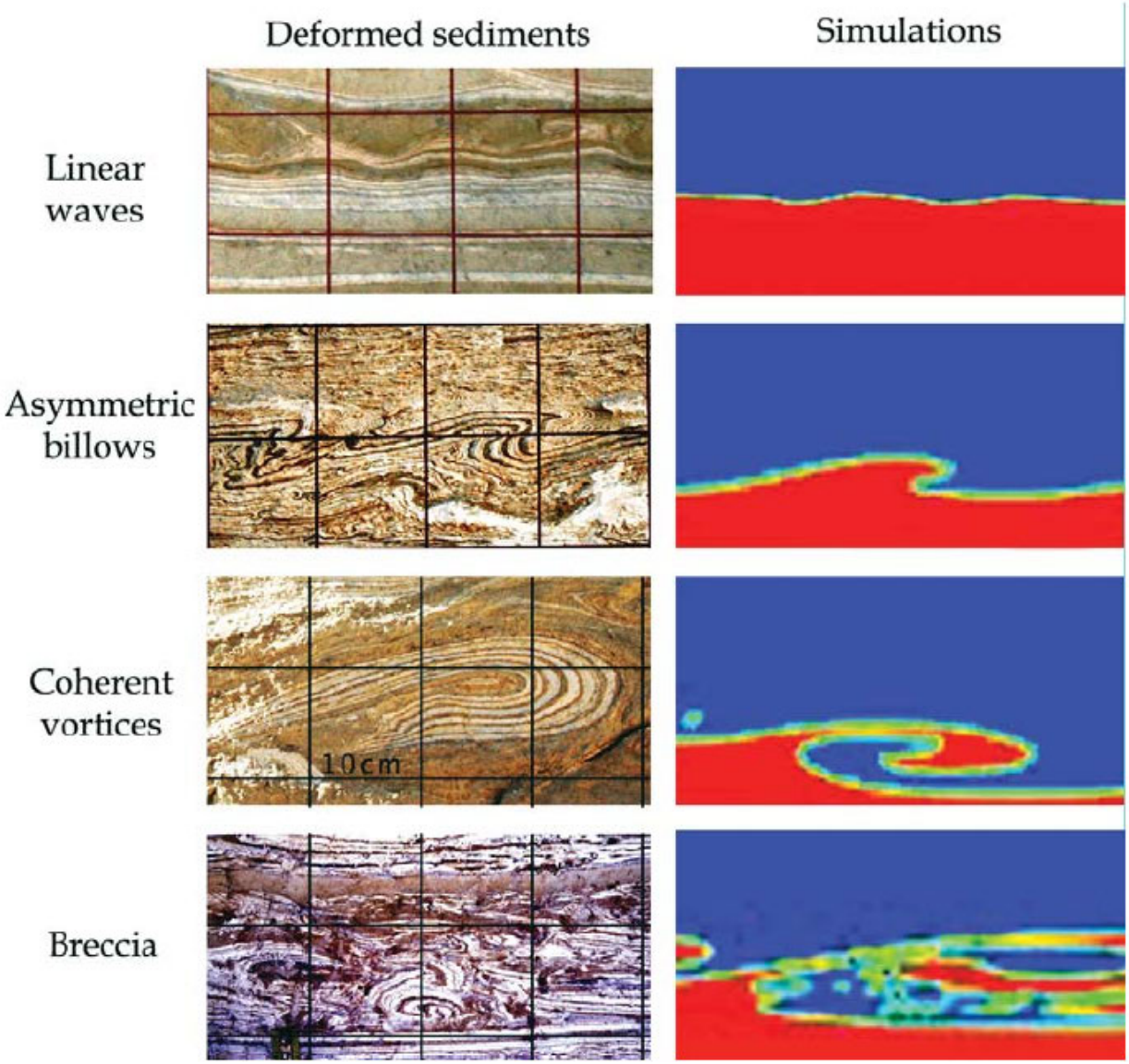

Figure H-2 – Field observations of seismite types observed in the Pleistocene Lisan formation to the left along with numerical simulations of a similar stage of Kelvin-Helmholtz instability evolution to the right (from Wetzler et. al., 2010). Identical seismite structures have also been observed in the Holocene Ze 'elim formation.

A semi-algorithmic form of the graph from Figure H-1 is shown below. For any given seismite, one can estimate average peak horizontal ground acceleration (PGA_{avg}) using seismite thickness (h) in meters and Seismite Type as input. The transform of Wald et. al. (2010) is used to convert PGA to Intensity.

Seismite Type 1 – Linear Waves

$$PGA_{min} = -0.0724 \times h^4 + 0.1583 \times h^3 - 0.1731 \times h^2 + 0.1467 \times h + 0.1285$$
$$PGA_{max} = 0.958 \times h^4 - 1.8047 \times h^3 + 0.6093 \times h^2 + 0.5157 \times h + 0.1753$$
$$PGA_{avg} = \frac{PGA_{min} + PGA_{max}}{2}$$
$$I_{avg} = \left|3.66 \times \log_{10}(PGA_{avg} \times 980.665) - 1.66\right|$$

Seismite Type 2 – Asymmetric Billows

$$PGA_{min} = 0.958 \times h^4 - 1.8047 \times h^3 + 0.6093 \times h^2 + 0.5157 \times h + 0.1753$$
$$PGA_{max} = -1.4741 \times h^5 + 5.2872 \times h^4 - 6.0974 \times h^3 + 1.9591 \times h^2 + 0.7484 \times h + 0.379$$
$$PGA_{avg} = \frac{PGA_{min} + PGA_{max}}{2}$$
$$I_{avg} = \left|3.66 \times \log_{10}(PGA_{avg} \times 980.665) - 1.66\right|$$

Seismite Type 3 – Coherent Vortices

$$PGA_{min} = -1.4741 \times h^5 + 5.2872 \times h^4 - 6.0974 \times h^3 + 1.9591 \times h^2 + 0.7484 \times h + 0.379$$
$$PGA_{max} = \min\left(1485.3 \times h^4 - 387.64 \times h^3 + 37.797 \times h^2 + 0.041 \times h + 0.5357\ , 1\right)$$
$$PGA_{avg} = \frac{PGA_{min} + PGA_{max}}{2}$$
$$I_{avg} = \left|3.66 \times \log_{10}(PGA_{avg} \times 980.665) - 1.66\right|$$

Seismite Type 4 – Breccia

$$PGA_{min} = \min\left(1485.3 \times h^4 - 387.64 \times h^3 + 37.797 \times h^2 + 0.041 \times h + 0.5357\ , 1\right)$$
$$PGA_{max} = 1$$
$$PGA_{avg} = \frac{PGA_{min} + PGA_{max}}{2}$$
$$I_{avg} = \left|3.66 \times \log_{10}(PGA_{avg} \times 980.665) - 1.66\right|$$

terms

$$h = Seismite\ thickness\ (m)$$
$$PGA = Peak\ horizontal\ ground\ acceleration\ (g's)$$
$$I = Intensity\ (unitless)$$

Technique 2 – Modified Williams

Williams (2004) used numerical modeling from a one dimensional seismic model (SHAKE) to develop a transform between seismite thickness and local PGA for the Ze 'elim formation at Nahal Ze 'elim which did not take into account seismite types. However, with modifications presented in the equations below, Williams' (2004) transform does take into account seismite types and produces very similar PGA estimates to the estimates from Figure H-1 taken from Lu at al (2020a). The only substantive difference between Williams' modified technique and the technique of Heifetz and Wetzler as shown in Lu at al (2020a) comes at lower values of Intensity. Williams (2004) estimated a PGA threshold for seismite formation of 0.23 g while the threshold from Lu at el (2020a) is 0.13 g. Further research is likely required to more accurately estimate the threshold of seismite formation incorporating estimates of (primarily lateral) soil strength as this has implications for the Dead Sea seismite record. Williams (2004) higher threshold is based on observations from lab testing (Sam Frydman, personal communication 2001) which showed that the aragonite crusts add additional lateral support to the sediments. A higher PGA threshold suggests that perhaps 15-25% of the published earthquake date assignments for Dead Sea seismites are incorrect.

Step 1 – Compute CCS (note that seismite thickness is in cm.)

$$If\ h < 0.75\ cm.\ then\ h = 0.75\ cm.$$
$$CCS = h \times [0.0000162\ + 0.000000149883 \times (\mathrm{h} - 0.5)]$$

Step 2 – Compute PGA from CCS

$$Case\ CCS < 0.0000086$$
$$PGA = 0$$
$$Case\ 0.0000086\ \leq \mathrm{CCS} \leq 0.0002756$$
$$PGA = 0.225 + 1200 \times \mathrm{CCS} - 2000000 \times \mathrm{CCS}^2$$
$$Case\ CCS > 0.0002756$$
$$PGA = 0.39 + 175 \times CCS - 10000 \times CCS^2$$

Step 3 – Boost PGA for Seismite Types 3 and 4

$$Seismite\ Type\ 3 - Coherent\ Vortices$$

$$PGA = PGA + 0.2$$

$$Seismite\ Type\ 4 - Breccia$$

$$PGA = PGA + 0.4$$

Step 4 – Convert PGA to Intensity

$$I = |3.66 \times \log_{10}(PGA \times 980.665) - 1.66|$$

terms

$h = Seismite\ thickness\ (cm.)$

$CCS = Cumulative\ Catastrophic\ Strain\ (unitless)$

$PGA = Peak\ horizontal\ ground\ acceleration\ (g's)$

$I = Intensity\ (unitless)$

Supplemental Appendix H – Information on the Authors

Name	Profession	Language and Date of Composition	Location	Notes
Paul the Deacon	Monk, Deacon	Latin End of the 8th c.	Lake Como, Italy	Fluent in Latin and Greek.
Anastasius Bibliothecarius	Chief Librarian and archivist in Vatican Library, briefly a claimant to the papacy	Latin 871-874 CE	Rome	Fluent in Latin and Greek. Was more of a copyist than an author. Appears to have accessed an earlier version of Theophanes.
Theophanes	Monk	Greek 810-814 CE	Near Constantinople	Compiled from many uncited sources
George Syncellus	Monk			Theophanes continued Syncellus' Chronicle
Nicephorus	Patriarch of Constantinople, Confessor	Greek Early 9th c.	Constantinople or near Constantinople	
Georgius Monachus	Monk	Greek Last half of 9th c.	Constantinople	
Megas Chronographos (anon.)		Greek Mid-9th c.	?	Inserted into a manuscript of Chronicon Pascale
George Cedrenus	Proedrus (Senior Court and Ecclesiastic Official)	Greek 1050s CE	Anatolia	
Minor Chronicles (anon.)		Greek ?	?	
Joannes Zonaras	Grand Commander of the Palace Watch, Private secretary to the Emperor, Monk	Greek 12th c.	Constantinople or near Constantinople	
Michael Glycas	Imperial secretary, Theologian, Magician (?), Prisoner (?)	Greek 2nd half of 12th c.	Vicinity of Constantinople	
Pseudo-Dionysius of Tell-Mahre	Priest, Monk, ex-Stylite (?)	Syriac 750-775 CE	Zuqnin Monastery	Was a member of one of the eastern churches (likely Jacobite). Only one copy of his work survives. It may be the autograph (i.e. the original manuscript)

Theophilus of Edessa	Astrologer. Translator, Scholar	Syriac	Edessa ?, Baghdad ?	Chronicle is lost. Maronite or Melkite. Was the Court Astrologer for Abbasid Caliph al-Mahdi at the end of his life. Reputedly died at the age of 90.
Dionysius of Tell-Mahre	Patriarch of Antioch, Head of Syriac Orthodox Church	Syriac		His works are largely lost but were quoted by later authors such as Michael the Syrian who explicitly cited him as a source and probably Chronicon Ad Annum 1234 as well. Dionysius of Tell-Mahre cited Theophilus of Edessa as a source.
Elias of Nisibis	Bishop, archbishop, Cleric of the Church of the East	Syriac/Arabic Early 11th c.	Nusaybin, Turkey	Cites sources
Michael the Syrian	Patriarch of the Syriac Orthodox Church	Syriac late 12th century CE	probably at the Monastery of Mar Bar Sauma near Tegenkar, Turkey	
Chronicon Ad Annum 1234 (anon.)		Syriac beginning of the 13th c.	possibly in Edessa or the Monastery of Mar Bar Sauma near Tegenkar, Turkey	
Agapius of Menbij	Bishop of Manbij	Arabic 10th century CE	Manbij, Northern Syria	Melkite. Cited Theophilus of Edessa as a source.
Severus ibn al-Muqaffa	Monk, Bishop	Arabic 10th c.	Egypt	Member of the Coptic Church. Translated an earlier contemporaneous Coptic text into Arabic
George al-Makin	Historian, Scribe	Arabic 1262-1268 CE	Damascus (parts may have also been written in Cairo)	Member of the Coptic Church.
Chronicon Orientale (anon.)		Arabic 13th c.		Member of the Coptic Church.
Ra'ash shvi'it (anon.)		Hebrew Difficult to date	?	Liturgical Poem
Book of prayers (anon.)		Hebrew 10th-11th c.	?	Found in Cairo Geniza
Abu l'Fath		Arabic 1355 CE	?	Samaritan. Multiple differing manuscripts exist.

Chronicle Adler (anon.)		Arabic ? ?	?	Samaritan. Debated origin but thought to rely heavily on Abu l'Fath.
Mekhitar of Ayrivank	Monk	Armenian 13th c.	Medieval Monastery of Geghard	Brief Chronicle.
Al-Masudi		Arabic Mid-10th c.	Egypt ?	Muslim – Shi'ite
al-Maqdisi	Geographer	Arabic Ca. 985 CE	Jerusalem ?	Muslim
Sibt ibn al-Jawzi	Preacher, Historian	Arabic 13th c.	Damascus	Muslim. Not to be confused with his grandfather Ibn al-Jawzi.
Ibn Nazif Al-Hamawi	Administrative Official, Historian	Arabic Early 1230s CE	Homs, Syria	Muslim
al-Dhahabi	Theologian, Lawyer, Professor	Arabic Early 14th c.	Damascus	Muslim
Jamal ad Din Ahmad		Arabic 1351 CE	Jerusalem ?	Muslim
Ibn Tagri Birdi	Historian	Arabic 15th c.	Cairo	Muslim
As-Suyuti	Prolific writer, polymath	Arabic 15th c.	Cairo	Muslim – Sufi. One of the most prolific writers of Islamic Literature.
Mujir ad-Din	Qadi (Shari'a judge), Historian	Arabic Ca. 1495 CE	Jerusalem	Muslim
Ibn al-Adim (aka Kemal ad-Din)	director of one of Aleppo's principal Islamic schools	Arabic Before 1260 CE	Aleppo or Cairo	Muslim , Cited in Blochet (1895;46 n.3)
?		Arabic ?	?	Muslim , From Le Strange (1905:130-131) - Le Strange did not cite the source

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