# ALMA Digital Atlas of the Ancient Jewish World: An Introductory Essay

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## Abstract

The "spatial turn" in the humanities has led to increased exploration of spatial perspectives. This shift inspired the ALMA Digital Atlas of the Ancient Jewish World project, which aims to develop a comprehensive digital-analytical atlas. It is intended to serve as a tool for geographical and comparative research on ancient Jewish geography, spanning the Hellenistic and Byzantine periods. The atlas builds on two elemental entity types: *place*, which pertains to regions or settlements, and *source*, which addresses pertinent historical texts, archaeological finds, or both, allowing for the robust comparison of geographical information from various sources. This project seeks not only to address existing historical and geographical questions but also to raise new ones, offering fresh insights into geographical perception in antiquity.

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# 1. Introduction

New platforms and tools—image processing and computer vision—are revolutionizing the study of space. Since the 1990s, scholars have been seeking alternatives to rigorous geographical analysis that is not reducible to simple geometrical shapes (Marienberg-Milikowsky 2022: 315). David Bodenhamer observed: "Spaces are not simply the setting for historical action but are a significant product and determinant of change. They are not passive settings but the medium for the development of culture" (Bodenhamer 2010: 16). This shift in spatial awareness did not only spawn broad interdisciplinary research projects that integrated formerly distinct subjects, such as people, time, events, history, beliefs, cultures, religion, and politics, but also drove historians to use geographical information systems (GIS) and their multilayered maps. The GIS's ability to link and manage vast amounts of data of various types and formats in their spatial context makes it a powerful research tool for the rediscovery of geographic space.

In line with this spatial turn, the ALMA Digital Atlas seeks to promote this paradigm shift in the study of ancient Jewish history. It provides a geographical analytical lens for exploring identity, interconnections, and continuity and change throughout different regions and over nearly a thousand years from the Hellenistic to the late Roman-Byzantine periods. By combining a bird's-eye perspective with rich detail, the digital atlas facilitates the study of the *imago mundi* of Late Antiquity Jewish texts and their geographical, cultural, and historical contexts. In turn, this scholarship is expected to generate novel research questions and facilitate new, hitherto unfeasible comparisons of corpora, objects, textual references, periods, and regions.

Specifically, ALMA is a response to the absence of Jewish sources in other digital platforms, such as Pleiades (https://pleiades.stoa.org/), DARMC (Digital Atlas of Roman and Medieval Civilizations, https://imperium.ahlfeldt.se/), and Roman World Maps (https://tinyurl.com/y2m3eer5). Even the most outstanding atlases do not incorporate evidence from and analyses of Jewish materials, be they textual or substantial. We envision the ALMA database as a geographical tool for the study of ancient Jewish sources that can function both independently and in conjunction with other tools. This interoperability will greatly expand the research horizons that the platform provides for both general and Jewish historians, as well as geographers, archaeologists, art historians, and many others.

## 2. Constructing the Database

Inaugurated in 2015, the ALMA Project is an online digital map platform based on Late Antiquity Jewish and non-Jewish sources (http://alma.haifa.ac.il/). Its goal is to develop an open digital atlas of historical and archaeological information about Jews in antiquity.

The project has two phases: curation and analysis. The data curation process concerns the collection of geographic references of Jews and Jewish communities from the 4th century BCE to the 7th century CE. For this purpose, we employed data mining and incorporated existing databases, such as TAVO (Tübinger Atlas des Vorderen Orients) and the Academy of the Hebrew Language *Ma'agarim* database (https://maagarim.hebrew-academy.org.il/Pages/PMain.aspx).[1] The source material is tagged and characterized by geographic region, date, language, medium, archaeological context, and literary source. The aim of this phase was to produce a multilayered, searchable digital geo-information database that facilitates data cross-sectioning, dissection, and analysis. The database's user-friendly, open platform is available to the academic community, the general public, and anyone interested in classical antiquity, ancient history, theology, archaeology, epigraphy, and cultural and art history.

The abovementioned data is arranged in five distinct corpora constituting the database's foundational architecture; they are listed here according to the quantity of data they currently contain in descending order:[2]

a. *Rabbinic literature and other Late Antiquity Jewish writings.* The project started by mining Tannaitic and Amoraic literature, both Palestinian and Babylonian, for geographical sites. Also included are the Jewish Aramaic *targums*, which primarily span the Talmudic and Islamic periods. They contain an abundance of biblically-derived geographical information rendered in dialects specific to each *targum*. Another useful Late Antiquity Jewish source is Jewish liturgies (*piyyut*), which occasionally contain toponyms or other geographical details.

b. *Second Temple period literature.* This corpus comprises apocryphal and pseudo-epigraphical literature, Qumran literature, and the works of Philo and Josephus.

c. *Greco-Roman sources.* This corpus is grounded in Menahem Stern's compilation, *Greek and Roman Authors on Jews and Judaism* (Stern 1976), as

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[1]  Entries defined as *place names* were collected from these databases. Other sources and indexes include (but are not limited to) Obermeyer (1921), Klein (1939), Neubauer (1965), Neaman (1971), Avi-Yonah (1976), Segal (1979), De Lange (1985), Tsafrir, di Segni, and Green (1994), Noy (1993; 1995; 2000), Noy and Bloedhorn (2004), Noy, Panayotov, and Bloedhorn (2004), and Talbert (2000).

[2]  At the moment, a. is almost fully recorded, c. and e. are in progress, b. and d. are still need to be done.

well as additional sources published since its appearance. The references are linked to the Perseus website (http://www.perseus.tufts.edu/hopper), a digital library of Greek and Roman sources.

d. *Christian literature.* A corpus of references to Jewish geographical locations in the New Testament and patristic writings.

e. *Epigraphic, papyrological, and archaeological finds.* Finds indicative of Jews, for example, synagogues, ritual baths, inscriptions, or Jewish art.

The project's second phase entails the application of the spatial data generated in the first phase to various research questions, some of which have engaged scholarly interest for generations: Is it possible to identify correspondences between the extant epigraphic and literary sources with respect to various regions? Does the characterization of what constitutes a Jewish community differ between rabbinic, Greek and Roman, and patristic literature? Can we identify affinities between prominent individuals or communities in different periods and regions? Can we draw the "mental maps" reflected in the various literary sources (see Ben-Eliyahu 2013: 17–18)? In conjunction with appropriate methodologies, the database is expected to open new vistas into the nature and intensity of interconnections between Jewish communities.

## 3. Features of the ALMA Database

The Digital Atlas Project's GIS and computerization laboratory are housed at the University of Haifa. We have preliminarily mapped references to Jewish toponyms in rabbinic literature, some Greco-Roman sources, and relevant archaeological findings (e.g., inscriptions, papyri, synagogues, ritual baths, numismatic finds, and bullae), all accessible through the website. Presently, the website is available in English only; a Hebrew version is under construction. Next, we will map references to Jewish presence in Second Temple-period texts and early Christian writings. We will also refine the existing data on the sites and sources, upgrade the search engine, and expand the available search parameters.

The database constitutes the core of this geographic project. ALMA's database contains two entity types: *place* and *source*.[3] A *place* is any entity with geographic characteristics. Such an entity can be represented by a point to designate relatively specific locations, such as houses, villages, or mountains, a line for streams and roads, or a polygon—a sequence of (x, y) coordinates, which indicate areas or regions—for larger spaces, such as provinces, countries, tax districts, and so forth. A *source* is a brief passage of text that mentions at least one geographical entity.

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[3] The term *entity* is elemental in computational processing (see Guarino, Oberle, and Staab 2009: 1–17; Marienberg-Milikowsky 2022: 310–313).

Some places are mentioned in multiple sources (e.g., the city of Lod appears dozens of times in various sources), and some sources mention several places. Thus, for example, *m. Sotah* 7:5 reads (Sefaria n.d.), "How were the blessings and curses [pronounced]? When Israel crossed the Jordan and came to Mt. Gerizim and Mt. Ebal, which are by Samaria, in the vicinity of Shechem, which is near the terebinths of Moreh."

In the database, the information on places includes their location, source references, and various spellings and configurations (e.g., בהר, מהר עיבל, להר עיבל, עיבל; קרמיון, קדמיון). Furthermore, because identifications can be ambiguous, we indicate whether they are certain or doubtful, specify past and accepted identifications (including references), and provide alternative identifications.[4] Altogether, we aim to provide as accurate and up-to-date information as possible.

Presently, the place reference table contains approximately 14,000 citations that link almost 900 places to about 100 tagged compositions. Each line in the database contains both a literary and a geographic reference, allowing us to construct the map manually. Each geographic mention is identified and referenced in the WGS84 (World Geodetic System, 1984) network as a city, village, topographic object, and so on. The geographical mention now appears on the map, along with all literary references to that location.

ALMA's search function enables one to query a whole corpus or a specifiable component thereof: a tractate, a composition, or another kind of subdivision according to the published works' conventions. Thus, querying the Talmudic literature, one can restrict the search to the Talmud Bavli or Talmud Yerushalmi or search a tractate across compositions, such as the Mishnah, Bavli, and Yerushalmi. Similarly, it is possible to query the Graeco-Roman corpus just for Diodorus Siculus, Aeschines, or Herodotus; in the future, one will be able to search the Christian corpus or Eusebius' Onomasticon, specifically. Inscriptions in the archaeological corpus will also be searchable in this manner. The site includes a comprehensive list of sources that will be continuously updated as the work progresses. Because the ALMA website allows map-based data display and extraction, one can now consult massive scholarly works whose preparation was time-consuming, such as Yehuda Elitzur's appendix to the Margulies edition of Leviticus Rabbah (Margulies 1993: Vol. 5:xxiv) or Uzi Leibner's appendix to the Hirshman edition of Kohelet Rabbah (Leibner 2016: 116), with a click of the mouse. The text-grounded presentation enables the creation and examination of maps that reflect the geographic space referred to in the texts and references each text's map and chronological stratification.

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4   Identifications are collected manually from scholarly writings, including onomasticons, encyclopedic entries, and atlases. The archaeological corpus is based on TAVO (Tübinger Atlas des Vorderen Orients) and will be completed in the future after a broad survey.

# 4.  Challenges

The construction of a historical-geographical atlas that is based on often fragmentary ancient sources must inevitably confront both typical and unforeseen challenges. In the following, we address some of the major problems and possible solutions.

## 4.1. Periodization

At present, the project spans the period between 332 BCE—Alexander the Great's conquest of the East—and the 7th century CE—the Arab conquest of the Middle East. The choice of this chronological framework inheres in the availability of websites that map the geography of the biblical world— Hatakanck.com (https://www.hatanakh.com/map), DAAHL (https://daahl.ucsd. edu/DAAHL/EsriPiPDigitizer.php), OBD (https://www.odb.bibelwissenschaft.de/), Openbible.info (http://www.openbible.info/geo/atlas/)—and Nicolas De Lange's Byzantine world Jewry mapping project, which spans between 650 CE and the conquest of Byzantium in 1453 CE (http://www.byzantinejewry.net/). Because periodization is always somewhat arbitrary, there may be other relevant sources outside ALMA's temporal framework; however, in projects of this type, such situations are unavoidable (see Goshen-Gottstein 2019; Segal 2018).

## 4.2. Location and identification

When creating a historical atlas, the first step is identifying locations mentioned in the literary sources and matching them with a geographical representation that can be marked on a map. This undertaking is often challenging, and it goes without saying that a significant number of names cannot be identified. Here, we build on the rich findings from past scholarship. Other identifications are based on the latest available work in the field, such as I. L. Levine's onomasticon of Talmudic toponyms (yet unpublished).

Our identification policy tends to the side of caution. Like other digital atlases, our choices reflect the degree of certainty with which a specific place can be located on the map. We use three tags: *certain* for cases where no doubt exists or where we have convincing information, *uncertain* where in doubt, and *unknown* where information is unavailable. In the future, we will add a feature that can simultaneously display multiple identifications for one source or one name. As far as possible, the identification process relies on the research already done for specific places. The project will be complemented and elaborated by crowdsourcing, which will encourage users to introduce corrections and updates to ALMA's database.

Naturally, places like Caesarea and Bet She'an (Scythopolis) are easily identified. However, smaller villages or places that occur less frequently in the corpus are more challenging to pin down. Doubt can result from a number of factors, singly or in conjunction: (1) difficulty in deciphering the original text or reconciling several versions of the same source; (2) several names for the same location; (3) several locations with the same name; (4) scholarly disagreement; and (5) various contextual incongruities.

The complexity of the task of identification can be illustrated by the case of the settlement of Ramon (or Rimon). It occurs in several forms in rabbinic literature, and scholars have placed it in Lower Galilee, east of Benjamin, and south of Mount Hebron. Sometimes, one scholar even voices several opinions about a given location (e.g., Leibner 2006; Leibner and Arubas 2015, for two different identifications of the Tower of Tzabbaia).

Context-based identification (no. 5 above) poses another challenge. Most scholars assume that if a biblical verse includes several place names, the locations of most of which are known, we may cautiously assign the unknown place to roughly the same whereabouts. Thus, for example, the place named *Afriki* appears in the *targums* (the Jewish Aramaic biblical translations) as the translation of biblical *Gomer* (Gen 10:2; *Tg. Neof.* 10:2; *Tg. Ps.-J.* 10:2). If most place names in this verse were interpreted and understood by ancient *targums* as located in Asia Minor, should modern scholars also assign Afriki to Asia Minor even though numerous sources identify it as North Africa?[5] We posit that by proposing alternative principles of organization and using various parameters for understanding how space is structured in the sources, the atlas can facilitate the consideration of such questions and rethink this assumption.

## 4.3. Borders and polygons

Sometimes, our interest does not concern a specific location that is marked with a point and is comprised of definite coordinates but turns its attention to larger spatial units. These units may comprise historical, political, ethnic, or geographic divisions, such as provinces or "lands," which we designate with polygons. In turn, the polygon is based on the geographic feature *line*, which describes a location with a string of coordinates. There is, in addition, another challenge regarding the depiction of borders: Did people living at the time conceive areas with lines, or did they delineate them with points only? Were borderlines marked on the ground or in another fashion (see Wazana 2013: 11–57)? Another feature that

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[5]   The proposed location in Asia Minor is in Phrygia, while the common reading assigns Afriki to a province in modern Tunis.

complicates efforts to outline borders is the fact that they shifted, and we often do not have enough information to position them accurately.

The atlas, however, does not address the question of borders directly. In the absence of relevant data in our corpora and other trustworthy data sources, we compromised on modern political borders. Actually, the borders in the current platform are drawn much like those in the Barrington Atlas of the Greek and Roman World. Significantly, it is open to change in the future.

## 4.4. Geographic typology

Categorizing a place as a settlement or another type of geospatial feature carries significant implications for its computational designation and cartographic representation. The challenge stems from the dynamic nature of names, which can undergo semantic shifts. Thus, a term used to denote an extensive geographic entity, such as a province, can also apply to its capital or a central place in it, which itself might encompass other geographic entities. This issue quite frequently arises with Roman provinces and capitals and biblical names such as Bavel (Babylon), simultaneously referring to a city, a region, and an empire. Some Aramaic translations of one source (Gen 10:10) render it the Land of Bavel (ארעא דבבל; *Tg. Neof.*; *Tg. Onq.*; *Frg. Tg.*; *Gen. Rab.* 37). Although in this instance, we can arrive at a definitive decision based on a comprehensive study of the Table of Nations by Late Antiquity commentaries, other occurrences remain unresolved.

## 4.5. Real or legendary places?

We also note the gap between Late Antiquity sources and their canonical versions, on the one hand, and other earlier names and geographical traditions, on the other. Although literary works and other cultural products were created at specific times and places, they can include archaic names and identifications. Sometimes, we cannot be confident that these places constituted real geographical, physical entities. Eden and Sambatyon are cases in point. Acknowledging this source of ambiguity, we intend to implement the tags *legendary* and *real* to differentiate them. The only corpus in which these tags will not be used is the archaeological one because its data are usually anchored well in places that existed.

Actually, this is the first example of tagging, which makes way for a more systematic and expansive tagging phase in the database's development.

## 4.6. Using Jewish Aramaic translations as textual evidence

In order to create the map reflected in the *targumic* texts, we collected the geographical names mentioned in them. However, they pose a challenge: How

can we determine whether a name in the Aramaic translation represents a contemporary geographic name or merely repeats the biblical name? What do we do when the *targums* do not translate the biblical name at all? Should we relate to it as is, or should this word be removed from the database as it does not represent a contemporary geographic name?

To address such cases, we adopted three principles. We apply a minimalist approach and use only selected translations for the biblical names. Therefore, where biblical names are rendered as in the Hebrew text (e.g., Mitzraim [Egypt], Yavan [Greece], Azza [Gaza]), we do not consider them Late Antiquity geographic information. Our second operational principle involves checking other occurrences of biblical place names across different *targums*. Lastly, we analyzed different *targumic* attitudes toward geographic translations; for example, does Targum Neofiti's interest in geographic translation seem limited compared to that of Targum Pseudo-Jonathan?

Another typical challenge concerning geographical information in biblical translations is that a given name can be translated in several ways or that a single name can be used to indicate different biblical places. This, however, is a minor problem, as we are interested in the places people "had in mind." We presume that a place name mentioned in a source forms part of a mental map, and it is this map that we seek to describe, regardless of its biblical context.

## 5.  Preliminary Results: The Table of the Nations

Below, we present preliminary results of an analysis of a geography-rich biblical text known as *the Table of the Nations* and later commentaries on it. It appears in Genesis 10 and 1 Chronicles 1, describing the genealogy of Noah's descendants after the flood. It contains 70 names, which Jewish sources (the Aramaic *targums*, the Talmud, and Genesis Rabbah) identified with geographic locations and ethnic groups (see Weinfeld 1993: 48–49, 146). We draw on these identifications to delineate parts of the sources' *imago mundi*.[6]

Our procedure consists of two steps. We first locate the places mentioned in a given source and place them on the map; then, we draw a bounding polygon around them. In our case study on the Table of Nations, we drew polygons for

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[6]  The image of the world emerging from this analysis challenges a common notion, explicitly phrased by Ze'ev Safrai, that the expertise of the sages "was mostly limited to the Land of Israel west of the Jordan" (Safrai 2006: 503; but see his n. 28: "Translations of names and identifications appear, for the most part, regarding areas outside of the Land of Israel. This issue has yet to be studied"). For further discussion, see Ben-Eliyahu (forthcoming).

three sources (Fig. 1): Babylonian Talmud Yoma 10a, Genesis Rabbah 37, and the Aramaic *targum* of 1 Chronicles 1.[7]

The map suggests several preliminary conclusions. First, the polygons are not identical. Although one might expect rabbinic sources to have a shared geospatial conception, the place names found in each source indicate significant geographical differences, which "pull" the maps in different directions. Thus, for example, 1 Chronicles Targum (1:9) translates *Savtekha* (Gen 10:7) as *Azania*, which is located on the east coast of Africa, constituting this *targum*'s southernmost point. Conversely, the BT tradition locates *Savtekha* in Sagistan (probably in the Indus Valley), while Genesis Rabbah does not suggest a location at all. Similarly, 1 Chronicles Targum (1:15) and Genesis Rabbah 37 translate *Togarma* (Gen 10:3) as *Germania Berberia*.[8] Nevertheless, we must bear in mind that a single mention of a place in one source or the incidental absence of a word in another can distort a map by disproportionately "stretching" its horizons.
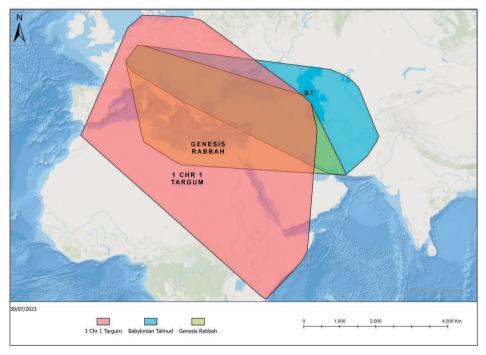


**Fig. 1.** Polygons encircling place names mentioned in the Table of the Nations as outlined in the Babylonian Talmud (BT), Genesis Rabbah, and the 1 Chronicles Targum.

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[7] While these three texts are not exhaustive, they reflect the main trends of concern. Onqelos was omitted because, with two exceptions, its geographical names are the same as the biblical ones, thus precluding a geographical reconstruction that reflects the translation's time. For Onqelos's approach to translation and the cases in which he strayed from it, see Kasher (2000: 82–84) and Tal (2018: 407–408).

[8] In Genesis Rabbah 37, *Germania Berberia* is first used as the translation for *Gomer* (Theodor-Albeck ed., p. 343) and later for *Togarma* (p. 344). The Biblical Talmud does not mention any identification for *Togarma*.

The area delineated by the BT Yoma (10a) differs from that produced by 1 Chronicles Aramaic *targum* and Genesis Rabbah. As a whole, this area extends from Sagistan in the east (east Iran), through Macedonia, to Italy and Germany in the west,[9] and from Persia in the south (southwest Iran) to Scythia on the shores of the Caspian Sea in the north.

Drawing the polygons according to specific cities (i.e., excluding extensive areas) produces some interesting distinctions (Fig. 2). Thus, the territory traced by the Babylonian source extends over a few hundred square kilometers in Mesopotamia. In other sources, however, the points cover comparatively extensive areas. It appears that the Babylonian translation reduces the biblical Table of Nations to the space closest to home, recognizing specific places only within the Babylonian sphere. In contrast, sources deriving from more western locations encompass broader regions, including points in Palestine, Byzantium, Egypt, and even Mesopotamia-Babylon.
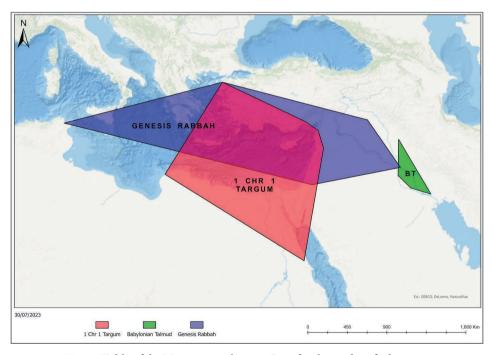


**Fig. 2.** Table of the Nations translations: Specific places identified (defined by coordinates and not as polygons).

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9    Scholars debate if *Germania* refers to a region in Europe or Asia Minor. In any event, this is a broad expanse. The debate also pertains to Genesis Rabbah. The scholars who place *Germania* in Asia Minor follow a tradition related to the sage R. Berekhia (see Grelot 1972: 135; Maher 1992). For the other identifications, see Alexander (1974: 121–124) and Levy (1881).

Table 1 compares the territories outlined by the various translations according to the distance between their farthest points. The Babylonian Talmud emerges as an interesting case. On the one hand, it demonstrates knowledge of distant areas and countries located beyond the scope of the 1 Chronicles Targum and Genesis Rabbah. However, on the other hand, precisely identified locations were restricted to Babylonia and its vicinity. In a sense, BT Yoma (Rav Yosef and his tradition, in this case) does not extend beyond Mesopotamia as in the region "between the two rivers." It appears that this geographical consciousness was unlike that of other contemporary Jewish sources and may point to a different spatial or ideological perception.

**Table 1.** Table of distances (km) between the maps' farthest points.

| Text | Distance of farthest specific locations (km) | Distance of farthest locations, regional or specific (km) |
| --- | --- | --- |
| Babylonian Talmud | 309 | 4,345 |
| Chronicles Targum | 1,187 | 4,323 |
| Targum Pseudo-Jonathan | 1,691 | 4,139 |
| Targum Neofiti (Marginalia) | 984 | 4,059 |
| Targum Neofiti | 1,772 | 3,410 |
| Fragmentary Targum | 1,596 | 3,367 |
| Palestinian Talmud | 689 | 3,278 |
| Genesis Rabbah | 2,635 | 3,229 |
| Chronicles Targum (alternate version) | 1,199 | 2,546 |

This insight becomes clearer when compared to a map of the polygons' center points (Fig. 3). These centers constitute the geographical average of the various points, specific and aerial, comprising each polygon. In this capacity, they are regarded as the map's focus.

The easternmost polygon center is of BT Yoma, while all the others are located further west in the Levant and East Mediterranean. Whereas the longitude of BT Yoma's geographical center is 42, most other sources are located between longitudes 31 and 32. Chronicles Targum features the westernmost center located at longitude 27. This is unusual. However, the center of the *targum*'s alternate version is at longitude 37. Thus, if we consider
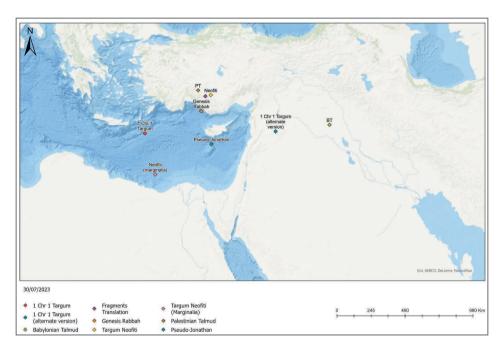
**Fig. 3.** A map of source polygon centers.

the two versions as elements in a shared composition, their averaged center will join the others at longitude 32.

When we consider only points for determining polygon centers (Fig. 4), the situation remains largely the same, except for a shift eastward (roughly along longitude 35). This indicates these sources' greater familiarity with specific points in the eastern Mediterranean, hinting at where these sources were created and compiled.

How should these findings be understood? The similar image of the world manifested in most Roman-Byzantine sources suggests that they are closely related, at least insofar as the biblical Table of the Nations is concerned. Although our conclusion might not be surprising, it is now supported by a quantitative index and contributes a new angle to the ongoing debate over the origin of some of the sources. Concerning Targum Pseudo-Jonathan, for example, while its affiliation with a cultural center located in the west is well established in the field, scholars also claim that it contains *targumic* materials that originated in the Babylonian Jewish center (Kasher 2000: 85–86; Tal 2018: 415–416). Based on our geographical findings, we conclude that Targum Pseudo-Jonathan's geographical horizon of Genesis corresponds to distinctly Palestinian sources such as Targum Neofiti and Genesis Rabbah.
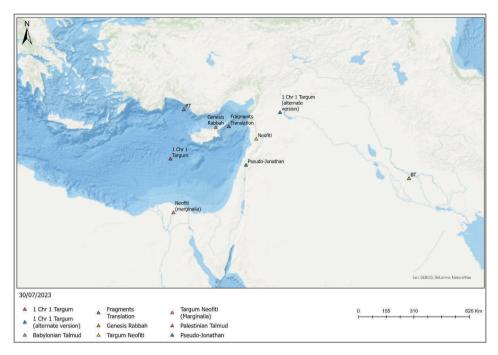
**Fig. 4.** A distribution map of source polygon centers considering points only.

In the future, we will construct similar maps for additional sources, going beyond the Talmudic corpus and including both earlier Hellenistic and later Christian and Roman sources. This will allow us to compare them spatially and demonstrate these maps' potential as a powerful comparative tool.

## 6. Conclusion

The ALMA database contributes to the study of historical geography in several respects. One of its major features is the comprehensive survey of multiple sources of information and their compilation in one database. To date, scholarly information has been only partially and sometimes arbitrarily collected according to composition or selected spatial borders. Thus, separate studies were conducted on Jewish Babylonian geography, the geography in Jubilees, the New Testament, and Targum Pseudo-Jonathan (Epstein 1892; Oppenheimer 1983; Scott 2002; Werman 2015). The current project aspires to collate all the available geographical information from various literary works and archaeological remains and thus enable comprehensive, systematic research of the entire geographic corpus of ancient Judaism.

The ALMA database also contributes to the field of Late Antiquity Jewish geography by deciphering names, adding relatively infrequent names, and correcting readings and misidentifications. The database contains names from comparatively unfamiliar sources and places whose exact locations are unclear. Sometimes, we reexamined scholars' decisions; in other instances, we put our hands on new information that helped determine a location. An outgrowth of this project is the reconsideration of previous geographic research, including the partial, sometimes naïve, observations of the 19th- and 20th-century canonical scholarship, such as the work of Jacob Obermeyer, Adolf Neubauer, Jacob Levy, and Aharon Oppenheimer.[10]

Another potential contribution of this atlas lies in the ability to characterize each composition according to its geography. In the past, Saul Lieberman tried to determine where ancient compositions, such as PT Nezikin or Sifre Zuta for Numbers, were edited. As opposed to the prevailing consensus, Lieberman maintained that, unlike the other tractates of the PT, PT *Nezikin* was produced by sages from Caesarea (Maritima) and not from Lower Galilee (Lieberman 1931; see also Ginzberg 1971: xxxvii). Similarly, he argued that Lod was the geographic context of the 2nd century CE *midrash Sifre Zuta* (Lieberman 1968: 92–124), whereas J. N. Epstein argued for Sepphoris (Epstein 1988: 145–147, 232; for a recent survey of opinions, see Kahana 2018: 176). In the future, after uploading the data of these compositions to the database, the digital platform will enable us to examine these suggestions and support or reject them based on comparative geographical analysis.

Despite the importance of these individual contributions, the ALMA project's main aim is to address broader issues and spark new questions. The digital program's primary analytical tool is the generation and comparison of maps, which incorporate various lines of information according to specific research needs. It also allows data to be filtered and sorted along various axes, including composition, period, geographic area, and geographic layer. Comparisons of this kind can suggest answers to numerous questions. For example, what sort of maps do different sources embody? What geographic conceptions can be deduced from these sources? Can we observe diachronic continuity between different types of maps? Can we trace geographic traditions and their transformations over time?

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[10]  For example, we reconsidered some of the speculations and identifications they offered for places mentioned in the Table of the Nations (Gen 10), such as תלאסר, נסיוטאי-ניווטאי, לוסטאי (see Levy 1881; Obermeyer 1921; Neubauer 1965; Oppenheimer 1983).

As this digital, computerized project continues to unfold and refine in accord with technological advancements and developers' exchange, we expect that it will have a multidimensional impact on the discussion of space in cultural-historical contexts.

# Acknowledgments

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