

A Quantitative and Grammatical Analysis of the Shira Design

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Introduction

Rambam *Hilchos Sefer Torah* 8:4-5 says that because of disagreements and misunderstandings about how to properly write a *Sefer Torah* (ST), he lists all of the פתוחות (פ) and סתומות (ס) in the Torah as well as the layout of *Az Yashir* and *Haazinu*. For accuracy, he says, he relied on a meticulously written very old *Sefer* from Egypt written by the noted scribe Ben Asher.¹ Some of the details he refers to in 8:4-5 are in *Hilchos Sefer Torah* 7:10. There he lists 6 items in the design of a *Sefer Torah* in general and the two *Shiros* in particular not mentioned in the Gemara but traditionally followed by Soferim:

- Each *daf* of a *Sefer Torah* is to have between 48 and 60 lines,
- פרשה סתומה should be separated by 9 blank spaces,
- The 5 lines that precede אז ישיר should start at predefined points,
- The 5 lines that follow אז ישיר should start at predefined points,
- The 6 lines that precede האזינו should start at predefined points,
- The 5 lines that follow האזינו should start at predefined points.²

In 7:11 he concludes that these 6 customs are preferred but not mandatory.³

This paper discusses these 6 preferences from a literal, historical and aesthetic perspective. We present and analyze pictures of very old *Sifrei*

¹ ח: וספר שסמכנו עליו בדברים אלו, הוא הספר הידוע במצריים, שהוא כולל ארבעה ועשרים ספרים, שהיה בירושלים מכמה שנים להגיה ממנו הספרים, ועליו, היו הכול סומכין, לפי שהגיהו בן אשר ודיקדק בו שנים, והגיהו פעמים רבות כמו שהעתיקו. ועליו, סמכתי בספר תורה שכתבתי כהלכתו.

² This is the text in most Rambams. We will discuss this fully later in the paper.

³ [יא] וכל הדברים האלו, למצוה מן המובחר; ואם שינה, לא פסל.

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Torah and Codices dating from the 10th to 13th Centuries (Rambam lived 1135 - 1204), including the Aleppo Codex which purportedly is the Ben Asher work Rambam cites, and assess their consistency with Rambam's list of preferences. Finally we discuss the evolution of the modern Ashkenazi *Vavei Haamudim* (VH) *Sefer Torah* and demonstrate how its treatment of the two *Shiros* visually enhances the beauty of their presentation in the *Sefer Torah* and offers a more grammatically consistent structure.

אז ישיר

In addition to the lines that precede and follow **אז ישיר** Rambam 8:13 adds:

The *Shira* of the {crossing of the} Sea should be written in thirty lines. The first line should be written in the usual fashion. The remaining lines, in one, a space should be left in the middle, and on the following line a space should be left in two places, so that the line will be divided in three portions. Thus, there will be a space below writing and writing below a space, and this is the format:

The actual picture that Rambam inserted in the text at this point is a matter of considerable disagreement. The **שינוי נוסחיות** section at the end of the *Sefer Abavah* volume of Frankel's Rambam offers 22 different pictures culled from a variety of manuscripts. The pictures differ in many ways including: the words that are on the 30 lines of the *Shira*, how the words are laid out on those lines and the sequencing of the single and double break lines. Moreover, many of these manuscripts seem to be at odds with Rambam's introductory words. Finally, of the 22 offerings only two include the extra lines that precede and follow the *Shira*. Standard Rambams include the format of **אז ישיר** itself but omit the leading and following lines. Machon Mamre's on-line resource includes these lines and its picture, Figure 1, is the one we will be using in this paper to compare and contrast to Rambam's words and to other ancient and current actual *Sifrei Torah*. We will refer to this text as MMT.⁴

⁴ MMT is very similar to a manuscript in Frankel's **שינוי נוסחיות** with one significant difference: In MMT the middle segment of a double break line is above and below the blank part of a single break line. In almost all 22 manuscripts, including the ones with the preceding and following lines, these middle segments overhang at least one segment of the line beneath it, e.g. Figure 2 below. This is consistent with one interpretation of **אריה על גבי לבינה ולבינה על גבי אריה** (*Megillah* 16b). Note that since the middle segment of line 4, ...זה, is much shorter than the blank space above and below it, to create an overhang some

Note that besides the layout of the *Shira* and the lines that enclose it, Figure 1 also includes two additional important pieces of information:

- A blank line between **אז ישיר** and the lines above it and the lines beneath it.
- The last word of the 5 lines that follow the *Shira* (i.e., Rambam says which word starts the fifth line but not where it ends).

With respect to the first item, the blank lines are mentioned in *Maseches Soferim* 12:8 and 12:11 but not in Rambam's text. They can however, be deduced⁵ from Rambam 8:1 and 8:7. In 8:1 Rambam says that if the words immediately preceding a **פרשה פתוחה** end less than 8 spaces from the end of the line, a blank line is left before the start of the new *parsha*.⁶ Table 1 gives the total number of letters and required blank spaces between words, for the lines preceding **אז ישיר**. Because they are all almost the same, i.e. 49 to 53, the last word before the *Shira* should be at the end of the fifth line. Combining this with Rambam 8:7 that **אז ישיר** is *pesucha* means there must be a blank line before the *Shira*.⁷

letters in the middle segment have to be significantly elongated. No elongation of letters is necessary in MMT.

⁵ See **רע"א** (R. Akiva Eiger) ה:ד.

⁶ Most *Chumashim* insert **פ** (*pesucha*) and **ס** (*setuma*) as appropriate but, unlike ST, do not skip spaces before the next word. Art Scroll *Chumashim* adhere to the *Sefer Torah* standard of skipping to the next line after *pesucha* and leaving 9 blank spaces after a *setuma*. As they write on the cover page of *מהדורת יפה* edition (no English): **הפרשיות הפתוחות והסתומות מודפסות כצורתן בס"ח**.

This approach is also used in the Stone Edition (English Chumash Translation) with a difference that in the Mahadura Yafa they also include the letters **פ** and **ס** (Note: for some reason they leave out the **פ** before and after the blank lines encompassing the *Shira*). Although they do not mention it, they also lay out the *Shira* in a manner similar to the way it appears in a ST, i.e. alternating 1 and 2 break lines, and a blank line above and below it. The reader should, however, not mistake Art Scroll's *Shira* presentation as reflecting the way it actually appears in a ST. The layout of both editions deviates somewhat from Rambam's 7:10, and from the way it is in our ST. At times the two editions also differ from each other.

⁷ Because of a dispute between Rambam and Rosh as to how to handle *pesuchos* occurring at the end of a line, such a situation occurs only four times in our ST, i.e. before and after AY and before and after *Shiras Haazinu*. Elsewhere an effort is made to have the *pesucha* occur at least 9 spaces before the end of a line (*Yorah Deah* 275:2). The only other place that blank lines appear in our *Sefer Torah* is between two *Chumashim* where the separation is always exactly 4 blank lines (Rambam, *Sefer Torah* 7:7). As we will see later this was not always the case.

Figure 1

Machon Mamre, Rambam⁸ - אז ישיר

הַבָּאִים אַחֲרֵיהֶם בַּיָּמִים לֹא נִשְׁאַר בָּהֶם עַד אֶחָד וּבְגֵי יִשְׂרָאֵל הִלְכוּ
 בִּבְשֵׁה בְּתוֹךְ הַיָּמִים וְהַיָּמִים לָהֶם חֲמָה מִיַּמִּינָם וּמִשְׂמָאלָם וַיֹּשַׁע
 יי בַּיּוֹם הַהוּא אֶת יִשְׂרָאֵל מִיַּד מִצְרַיִם וַיֵּרָא יִשְׂרָאֵל אֶת מִצְרַיִם
 מֵת עַל שַׁפְּתַי הַיָּם וַיֵּרָא יִשְׂרָאֵל אֶת הַיָּד הַגְּדֹלָה אֲשֶׁר עָשָׂה יי
 בְּמִצְרַיִם וַיֵּרָאוּ הָעַם אֶת יי וַיֵּאֱמִינוּ בַּיְי וּבְמִשְׁחָה עֲבָדוֹ

אֶז יִשְׁיֵר מִשְׁחָה וּבְגֵי יִשְׂרָאֵל אֶת הַשִּׁירָה הַזֹּאת לַיְי וַיֵּאֱמְרוּ	לֵאמֹר
אֲשִׁירָה לַיְי כִּי־גָאָה גָּאָה	סוּס
וְרָכְבוּ רָמָה בָּיָם:	עֲזִי וְזִמְרַת לְקוֹנֵיהִי לִי
לִישׁוּעָה	זֶה קָלִי וְאֲנִיְהוּ
אֲבִי וְאֶרְמְמָנְהוּ:	יי אִישׁ מִלְחָמָה יי
שְׁמוֹ:	מִרְכַּבַּת פְּרָעָה וְחִילוֹ יֵרָה בָּיָם
וְשָׁעוּ טַבְעוֹ בַּיָּם־סוּף:	תְּהַמֵּת יְכַסְּימוּ יִרְדּוּ בְּמִצּוֹלֹת כְּמוֹ
אֲבוֹ:	מִיָּהָה יי נֶאֱדָרִי בְּכַח
יי תִּרְעֵץ אוֹיֵב:	וּבְרַב גְּאוּנָה תִּהְרַס
קַמִּיָּה	תִּשְׁלַח חֲרָנְךָ יֶאֱכַלְמוּ פִקְשׁ:
אֲפִיָּה גִעְרָמוּ מַיִם	וּבְרִוּחַ
גְּזֵלִים	נִצְבּוּ כְּמוֹ נֵד
אוֹיֵב אֲרָדְךָ אֲשִׁיג	אֲמַר
נִפְלְשִׁי	אֲחַלֵּק שְׁגֵל תִּמְלֹאֲמוּ
בְּרוּחָה כְּסָמוּ יָם	נִשְׁפֹּת
אֲדִירִים:	אֲלָלוּ כְּעוֹפֹרֹת בְּמַיִם
כְּמִכָּה נֶאֱדָר בְּקִדְשׁ	מִי
פְּלֵא:	נִנְרָא תְהִלַּת עֲשֵׂה
בְּחֻסְדָּה עִם־נוֹ גְּאֻלָּתְךָ	נִחִיתְךָ
קִדְשִׁי:	נִתְלַת בְּעֻזָּה אֵל גְּנֵה
אֲחִז יִשְׁבִּי פִלְשֵׁת:	תִּיל
אֲדוּם	אֶז נִבְהִלוּ אֱלֹהֵי
כֹּל יִשְׁבִּי כִגְעוֹ:	נִמְגוּ
וּפְחָד	תִּפְלַעַלְיָהֶם אִימָתָה
יַעֲבֹר עִמָּךְ יי	עֲד־
קִנִּיתְךָ:	עֲד־יַעֲבֹר עִם נוֹ
לִשְׁבֵתְךָ פְּעֻלָּתְךָ יי	מִכּוֹן
יָדִיךָ:	מִקְדָּשׁ יי כּוֹנְנֵנוּ
כָּא סוּס פְּרָעָה בְּרָכְבוּ וּבְכַרְשִׁיו בָּיָם	כִּי
אֶת־מִי הַיָּם	וַיֵּשֶׁב יי עֲלֵהֶם
	וּבְגֵי יִשְׂרָאֵל הִלְכוּ בִּבְשֵׁה בְּתוֹךְ הַיָּם:

ותקח מרבים הנביאה אחרון את התרף בנדדה ותצאן כל הנשים
 אחריה בתפיים ובמחלות ותעזן להם מרבים שירו ליי כי גאה גאה
 סוס ורכבו רמה בים ויפסע משה את ישראל מים סוף
 ויצאו אל מדבר שור וילכו שלשת ימים במדבר ולא מצאו מים
 ויצאו מרתה ולא יכלו לשתת מים ממרה כי מרים הם על פן קרא שמה מרה

⁸ We have included the *trop* (cantillation) in the *Shira* itself for later reference.

Table 1

Summary of the 5 Lines Preceding *Az Yashir*⁹

Line	Letters	Space between Words	Total Spaces
1	41	10	51
2	41	8	49
3	43	10	53
4	39	11	50
5	42	8	50

Where Does the ךך with *Az Yashir* Begin?

Rambam does not say whether אַז ישיר and the 5 lines that immediately precede and follow it constitute an entire separate *daf* of the *Sefer Torah*. The preference of placing the start of the opening 5 lines on the top of a *daf* is supported by an early custom concerning *Sifrei Torah* that requires the *daf* to start with a certain word in 6 places. The 6 places are memorialized by the acronym ב"י שמו which represents the first letter of the required words, with the ה being the first letter of הבאים. *Hagaos Maimoni* (HM) questions the origin of the custom and challenges the possibility of having some of the letters on this list on the top of a page¹⁰, but accepts the ה of הבאים being on top of the *Shira daf* and the ך of ואעידה being on the top of the *Haazinu daf* because this is how he found them in “good *Sifrei Torah*”. Figures 2, 3 and 4 are respectively *Az Yashir* in:

⁹ This assumes all letters and spaces take up the same amount of widthwise space. To reconcile the Zohar’s assertion that a *Sefer Torah* has 600,000 letters with ours that have about 300,000, Rav Yaakov Kaminetsky suggests the Zohar is not referring to letters but cumulative widths of letters, with different letters have different widths. See *Hakirah* 5, Appendix A, page 219 for his chart of different letter sizes and how this results in cumulative letter width near 600,000. His scheme does not appreciably change the underlying equality of size of the lines we discuss.

¹⁰ There is disagreement as to what word each letter represents. HM offers his list of what word each letter represents and says that because of technical reasons some of these words cannot be on the top of a page. Others disagree with his letter-word association and say that all of the words can be on top of the page.

הג"מ ז"י: וכל זה מצאתי בספרים הטובים מאשור אשר יצא להם שם במעלותם שכותביהם קצרו והלכו ודחקו עצמם לעשות ראשי העמודים אלו וראשי שיטות אלו ככתוב בעמוד אמנם מה שנהגו הסופרים להוסיף כל אלו ולעשות ב"י שמו בראש הדפין... והתרתיו והפשתיו אהר הדבר בספרי הגאונים ובקשתי ולא מצאתיו בדברי הגאון...

- A 12th Century *Sefer Torah*- we will refer to it as STB
- A 13th Century *Sefer Torah*- we will refer to it as STA
- Leningrad Codex¹¹: the manuscript is dated Cairo 1009- we will refer to it as LC

In each of these very old works the 5 lines that precede the *Shira* start on the top of a *daf*¹². In the next sections we will review the *Shira* as it appears in each of these documents and discuss their consistency with Rambam's descriptions.

¹¹ A **Codex** is a book made up of a number of sheets with hand-written content usually stacked and bound with covers thicker than the sheets. The Romans developed this medium to replace the scroll, the dominant form of book in the ancient world. First described by a Roman poet in the 1st century CE the codex achieved parity in use with the scroll around 300 CE, and completely replaced it throughout the Greco-Roman world by the 6th century. The biblical text as found in the codex contains the Hebrew letter-text along with vowels and cantillation signs, in addition to masoretic notes in the margins. There are also technical supplements dealing with textual and linguistic details, many of which are painted in geometrical forms. The codex is written on parchment and bound in leather.

¹² Rambam's language may also imply that the first 5 lines start the page, i.e., ושיהיה בראשי השיטין למעלה משירת הים הבאים ביבשה ה' מת במצרים חמש שיטין. If the first 5 lines did not start on top of the page the last two words חמש שיטין are redundant since Rambam already mentioned how the 5 lines start.

Figure 2

Sefer Torah Dating from 1155-1225¹³



¹³ We designated this *Sefer Torah* STB because it was discovered at the University of Bologna. This picture is from National Geographic, May 30, 2013. A full description of how this *Sefer Torah* was found and identified, and comments about its style is available at: <<http://news.nationalgeographic.com/news/2013/05/130530-worlds-oldest-torah-scroll-bible-bologna-carbon-dating/>>. Not all of the comments on the website are consistent with the Jewish sources cited in this paper.

Figure 3

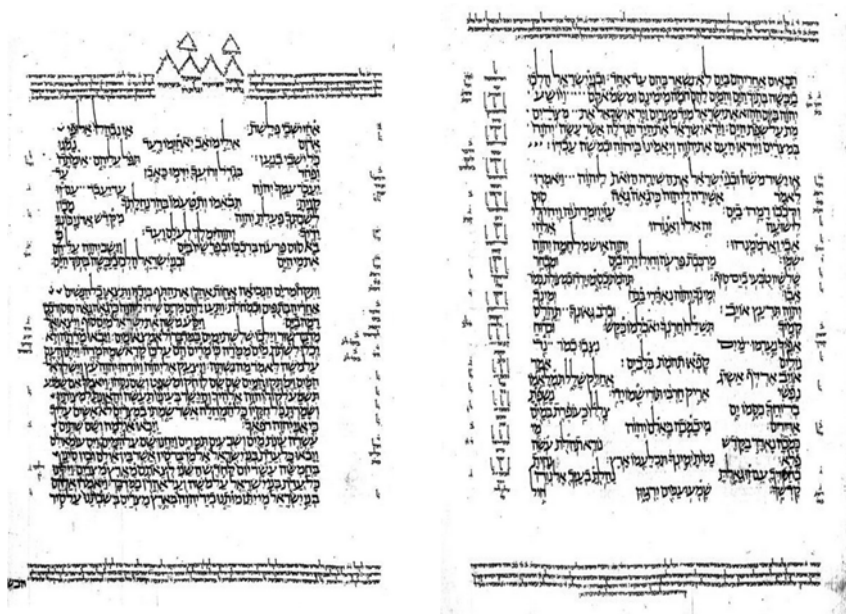
Ashkenazi Torah Fragment Circa 1270¹⁴



¹⁴ We designated this Sefer Torah STA because it is an early Ashkenazi *Sefer Torah*. This picture is from Sotheby's Catalogue: *Important Judaica*, New York | 19 Dec 2012, 10:00 AM | N08922. Sotheby's full discussion of this Sefer Torah is available at <<http://www.sothebys.com/en/auctions/ecatalogue/lot.pdf.N08922.html/f/106/N08922-106.pdf>>. Some of the comments on this website ascribe opinions to HM and others that are contrary to quotations from these very same sources as cited in this paper.

Figure 4

Leningrad Codex - *Aḥ Yashir*¹⁵



The *Shira* Section

The presentation of the *Shira* itself in MMT, STB and LC are identical. All have the alternating two and one break pattern until the next to last line. Had the pattern continued until the very end, the last line of the *Shira* would have two breaks but in all of these documents it has only a single break like the line above it. This is not true for STA¹⁶. Here the last line has the expected double break and the word *את* that starts the last line of the *Shira* in Rambam's picture, is moved to the end of the next to last line, i.e.

בְּאֵסוּס פְּרָעָה בְּרַכְבּוֹ וּבַבְּרָשִׁיׁוֹ בָּיָם
 וַיֵּשֶׁב יְהוָה עַל־הֶם אֵת
 מִי הָיִים וּבְנֵי יִשְׂרָאֵל הִלְכוּ בִּבְשָׁה בְּתוֹךְ
 הַיָּם׃

¹⁵ <https://archive.org/stream/Leningrad_Codex/Leningrad#_page/n83/mode/2up>.

¹⁶ 5 of the 22 variant texts in Frankel's Rambam have a single break (like SSB) and 4 have a double break (like SSA). The other 13 have different configurations.

rather than

בְּאֵי טוֹס פְּרָעָה בְּרַכְבּוֹ וּבְפָרְשׁוֹ בַּיָּמִים
וַיָּשָׁב יִי עֲלֵהֶם
אֶת מִי הַיָּמִים
וּבְנֵי יִשְׂרָאֵל הִלְכוּ בַּיְבֻשָׁה בְּתוֹךְ הַיָּמִים:

We suggest that both configurations are trying to address an internal problem inherent in the overall design scheme. A review of the words on each *Shira* line shows that the design goes beyond lines alternating single and double breaks. Note for example that double break lines always begin and end with a single word.¹⁷ Rambam's requirement that AY be 30 lines as well as the layout of these lines can be deduced from the grammar of AY and a few simple rules. The cantillation scheme (see Figure 1) reveals that for:

- 2 break lines- A single word starting the line ends a phrase; the middle of the line is a complete phrase; the single word at the end of a line starts a new phrase¹⁸
- 1 break line- The first half ends the previous phrase and the second half starts the next phrase leaving out one word that completes the phrase to start the next line. The second half must have more than one word.

Taking these rules together gives the exact layout that we have for the first 29 lines¹⁹. The last line, however, cannot conform to these rules.

¹⁷ Frankel's Rambam שינוי נוסחיות offers a lengthy discussion with regard to every double break line starting and ending with a single word, and questions how this is consistent with some of the 22 manuscripts? It does not, however, discuss the manner in which the single words were chosen. Our rules explain this.

¹⁸ Ends of phrases are recognized by a trop that is a *mafsik*. There is a hierarchy of *mafsikim* with the *sof pasuk* and the *esnabta* being the most prominent ones. At the next level is the *katon*. The following is a list of all the *trops*:

זָרְקָה סְנוּלֵי מִנְחָה מִנְחָה רַבִּיעַ מִהַפֶּדֶד פֶּשֶׁטָא זָקַף קָטָן
 זָקַף גְּדוֹל מִרְקָא טַפְחָא אֲתַנְחָתָא פֶּזֶר תְּלִישָׁא קִטְנָה
 תְּלִישָׁא גְדוֹלָה קְדָמָא וְאַזְלָא אֲזָלָא גֶרֶשׁ גֶּרֶשִׁים
 דְּרָגָא תְּבִיר יְתִיב פְּסִיקוּ מִתְּגַן סוּף-פְּסוּק שְׁלִשְׁלֹת
 קְרָנֵי-פְדָה מִרְקָא-כְּפוּלָה גֶרֶח-בֶּן-יוֹמוֹ

¹⁹ This may also be implied in the phrase אריה על גבי לבינה. Rashi, *Erwin* 13b explains that an אריה is half of a לבינה. Thus if we think of אריה as a single word and לבינה as an almost complete phrase, the *Shira* is set up by ending a double break line with an אריה followed at the start of the next line with a לבינה, and this single break line in turn ends with a לבינה followed at the start

If it has a double break (as in STA) it must end in a single word, forcing the middle of the line to include more than a complete phrase **וּבְנֵי יִשְׂרָאֵל** (i.e. it ends in a **מַרְכָּא** and not **טַפְחָא**). On the other hand, if the last line has a single break (as in MMT, STB and LC) it violates the alternating one and two break scheme. Ultimately the question is which of these two non-optimal choices is preferable? STA apparently prefers to maintain the visually consistent²⁰ alternating one and two break scheme even though some of the three parts of the line do not conform to its requirements. STB chose to overlook the non-alternating last line, with the last line, like the first line, not conforming to the alternating line scheme.

The Five Lines that Follow *Az Yashir*²¹

Table 2 gives layout statistics for the 5 lines that follow the *Shira* for MMT, STB and STA. Lines 1 through 4 are identical in all 3 sources with roughly the same width-wise requirements as the opening 5 lines. However, the 5th line in each of the 3 sources is different. In MMT the last line is substantially wider than the rest. To maintain the same right and left hand margins throughout, this single longer line causes extra blank spaces in the previous 9 lines (i.e., 5 above AY and 4 below). The last line of STB “remedies” this by omitting the last 3 words of MMT’s 5th line, **קָרָא שְׁמָה מְרָה**. Thus in STB all of the lines after the *Shira* exactly mirror the lines that precede it and require no extra blank spaces to maintain the page margins. For STA the last line omits only **מְרָה** from

of the next line with an **אַרְיָה**. Frankel’s **שִׁינוּי נֹסְחָיוֹת** suggests a similar explanation.

²⁰ The remaining question with respect to STA is why it did not start the last double break line, as every previous one, with a single word **הֵיִם**? Frankel’s **שִׁינוּי נֹסְחָיוֹת** section discusses this question. One possible answer may be related to the dispute as to whether the last *pasuk* in the *Shira* section, i.e., ... **כִּי בָא**, is part of the *Shira* (e.g., Ibn Ezra, Abravenel, *Machzor Vitri*) or simply a discussion of what happened (e.g., Ramban, Avudraham, *Siddur D’Rav Amram*). According to the latter view, this last *pasuk* is similar to the first introductory *pasuk*, **אִזּוּ יִשְׂרָאֵל**, which is entirely on the first line in normal format, except for the last word, **לְאִמֵּר**, which starts the line where the actual *Shira* begins. In a symmetrical manner, this last *pasuk* only has its first word **כִּי** on the same line as the *Shira* itself. To distinguish this last *pasuk* from the rest of the *Shira* the double break in the last line is differentiated by starting the line with two words rather than one.

²¹ See Appendix for a discussion of a possible reason for choosing these specific lines to precede and follow the *Shira* itself.

the MMT text. The last line here is more consistent with the other lines but is still somewhat longer.

Table 2

Summary of the 5 Lines Following *Az Yashir*

<u>Line</u>	<u>Letters</u>	<u>Blanks</u>	<u>Total Spaces</u>
1	43	10	53
2	44	10	54
3	34	17	51
4	42	10	52
5-MMT	48	14	62
5-STB	39	11	50
5-STA	45	13	58

While the 5 final lines in STB and STA differ from MMT only slightly at the very end, LC's differences are more pronounced. In this layout the final 5 lines are consistently wider than the ones that precede it (see Table 3).

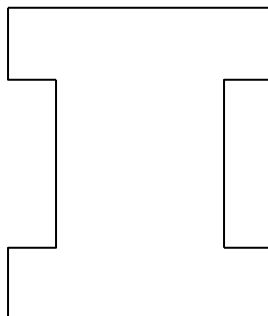
Table 3

Summary of the 5 Lines Following *Az Yashir* in Leningrad Codex

<u>Line</u>	<u>Letters</u>	<u>Blanks</u>	<u>Total Spaces</u>
1	43	10	53
2	52	12	64
3	33	17	50
4	47	11	58
5	45	13	58

The Panoramic View of *Shiras Az Yashir* According to MMT, STB and STA

Our discussion until now has concentrated on a linear comparison of the different sources vis-à-vis the 3 different segments of the *Shira* presentation, i.e. the introduction, the *Shira* itself, and the postscript. It is interesting to note that the sources do not agree on how these different components are integrated. In MMT, STB and LC the text of both sets of lines and the *Shira* itself are right and left justified with the same line width. The overview snapshot of each is a rectangle with a patterned spacing sequence in the middle part. In STA the *Shira* itself is indented on both the right and left margin with respect to the other lines, thus creating the following overview snapshot pattern:



Where does the םָם with *Az Yashir* end?

Do the 5 lines after the *Shira* complete the *daf*? From an aesthetic standpoint, having the *Shira* on a page of its own is very appealing. The five lines before and after the *Shira* frame the *Shira* itself and the story that leads into and follows it. Constructing the AY *Shira* in a 5, 1, 30, 1, 5 symmetrical pattern²² on a *daf* of its own, visually accentuates the Song and the glorification of Hashem, and differentiates it from the rest of the Torah. Despite this appealing characteristic, such a design would have 42 lines on the *daf* which would seemingly violate Rambam's minimum (7:10) of 48 lines per *daf*. It is perhaps because of this reason that the *Shira dafim* in both STB and STA continue after the bottom 5 lines²³ for another 6 lines. We would, however, argue that Rambam is not excluding a 42 line *Shira daf*, and that the 48 to 60 lines per page requirement refers to a general *daf* of the *Sefer Torah*, not to a *Shira daf*. As we have pointed out, *shiros* are aesthetically enhanced by being on pages of their own, with their own designed formatting structure to highlight their physical presentation. If a difference in the number of lines on this page with respect to the rest of the Torah contributes to this enhancement, then so be it. Rambam, in fact, may have placed the *balachos* of how many lines are to be on a *daf* together with the layout of the *Shira* precisely because the *Shira* is the exception to the general convention. Thus, not only is the "design" of the lines different than the rest of the Torah, but the number of lines may be different as well. As an example of this, note that while in STB the width of the *daf* following the *Shira* is the same as the width of the *Shira daf*, in STA the *Shira daf* is much wider than the other *dafim*.

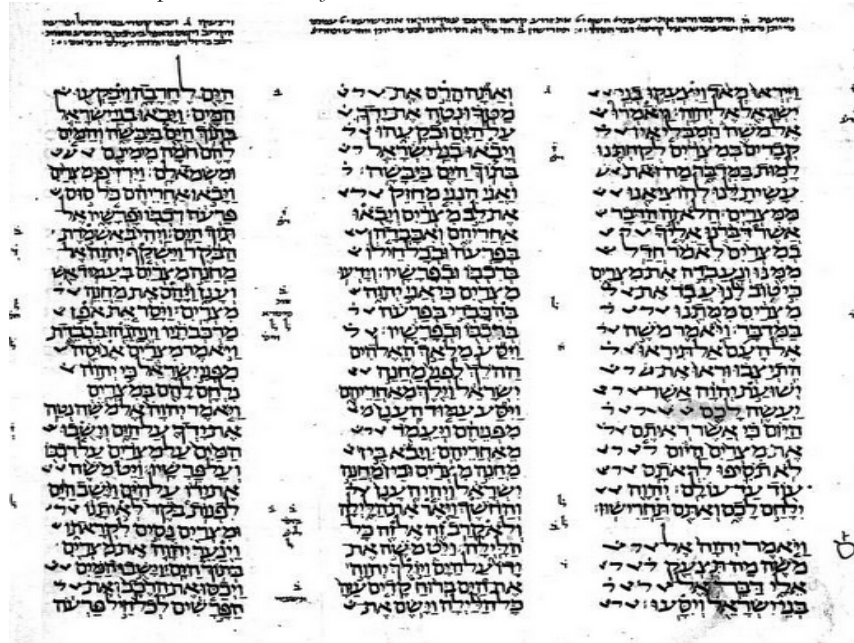
²² I.e.: 5 full lines, 1 blank line, 30 structured lines, 1 blank line, 5 full lines.

²³ MMT sheds no light with respect to this issue.

LC's postscript layout, like STB and STA, goes beyond five lines, but unlike them it: continues for 10 lines (not 6); is spread over 2 *dafim*; has 26 lines per *daf* (i.e. 5, 1, 20 on the first, and 10,1,5,10 on the second). Finally, like STA the *dafim* are wider than usual²⁴.

Although STB may have added another 6 lines to the *Shira daf* to satisfy Rambam's 48 line minimum requirement, we find its *daf* layout does not enhance the overall *Shira* presentation. The widths of the 5 lines that follow the *Shira* are virtually identical to the width of the last 6

²⁴ Below is a picture of the *daf* before the *Shira* in LC.

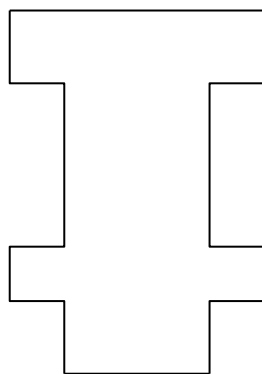


<https://archive.org/stream/Leningrad_Codex/Leningrad#page/n81/mode/2up>.

Note 1: These *dafim* each have 27 lines, not the 26 of the AY *dafim*.

Note 2: While a Codex may have been used by a *sofer* to copy text from when writing a *Sefer Torah* and to indicate the layout of a line, it is not clear that the number of lines on a Codex page was meant to be the same as that of a ST. Thus, even though the 26/27 line LC format forced the *Shira* to be on 2 *dafim* it did not mean that it was to be that way in a *Sefer Torah* and the extra 4 lines on the bottom of the 2nd *daf* of the *Shira* could have been on the next *daf* in a ST. This would then mean that the *sofer* who was copying from this Codex would have had to know which of the lines following the *Shira* had to be of wider width (in this case the first 5) and which when moved to the next page could return to the ST's regular width.

lines of this *daf*²⁵ and to the width of the other *dafim* (see Figure 2). If so, in this design what does it mean to highlight and speak about the 5 lines that follow the *Shira* when the 6 lines that follow them on the same *daf* are indistinguishable from them and the identically sized lines that immediately follow? This objection does not apply to STA where the last 6 lines of the *daf* in this design follow a different pattern than the prior 5 lines resulting in this layout:



Thus, even though the last 6 lines are on the same *daf* they are differentiated from the prior 5 lines. However, the final six lines on the *Shira daf* and the *Shira* itself are wider than the general line width in STA (see Figure 3), with the 5 lines that directly precede and follow the *Shira* being even wider. Why do these 6 lines merit special treatment?

²⁵ The letter-blank statistics of the last 6 lines are also similar to the previous 5 lines with the last line having an extra long סתומה break to make it even with the others:

<u>Line</u>	<u>Letters</u>	<u>Blanks</u>	<u>Total Spaces</u>
6	37	10	47
7	41	10	51
8	36	10	46
9	42	7	49
10	36	9	45
11	23	13	36

ווי העמודים ספר תורה

STA is an early example of a *Vavei Haamudim Sefer Torah* (VHST), i.e. a *Sefer Torah* which starts almost every *daf*²⁶ with the letter “*vav*”. For example, note that in Figure 3 the two *dafim* that precede the *Shira* column start with the letter *vav* and the last two words on the *Shira daf* are the start of *Shemos* 15:27 – ויבאו אילמה which means that the following *daf* starts with the third word in the *pasuk*, ושם (again a *vav*). This is in contrast to STB (Figure 2) where the 2nd *daf* following the *Shira daf* does not start with a *vav* (i.e., the first word is צוה from *pasuk* 16:34). At the point in time STA was written the concept of a VHST was in its infancy and had drawn criticism from many leading Rishonim. HM calls *soferim* who write such a *Sefer Torah* בורים and complains that it leads to distorted letters. He quotes his Rebbe, Maharam M’Rothenburg (1215-1293) as saying that if he were having a *Sefer Torah* written he would make sure that with the exception of *Shiras Haazinu* no *daf* started with a *vav*.²⁷ As late as the 1830’s scribes’ rulebooks said it is more or less forbidden to arrange the columns in this way²⁸. Despite this negativity, by the end of the 19th Century VHST, albeit not the VH of STA, became the norm in the Ashkenazi community. *Aruch HaShulchan* (1829-1908) explains that this came about because ultimately a master template for a VHST was developed that avoided the problems raised by the Rishonim.²⁹ He concludes that it is an “ענין גדול” to use such a *Sefer Torah*.³⁰

²⁶ The exceptions would be the *dafim* associated with ב'י שמו which we have previously discussed.

²⁷ הגהות מיימניות ז:ט:ז מה שנהגו סופרים בורים להתחיל כל עמוד בו"ו וקורין לו וויי העמודים ופעמים יש אותיות גדולות אשר לא כדת שמסדרה בספר העתקה המתוקן לכך עמודים רחבים ביש מקומות וכותבין עליו רחב ויש מקומות קצרים וכותב עליו קצר ופעמים אותיות משונות וארוכות הרבה כדי שיגיע וויי לראש... והנה כתבתי דברי אלה למורי רבינו והסכים על ידי אשר השיבני וששאלת על ספר תורה בווי העמודים ולא נכון בעיני כמו שכתבת ואינם לא מדברי תורה ולא מדברי סופרים אך סופר אחד היה ר' ליאונטין ממלהוזן שהראה אומנתו ואילו היה לי לכתוב ס"ת הייתי נזהר שלא היה שום עמוד מתחיל בוויי חוץ מאעידה במ עכ"ל

²⁸ <<http://hatam-soferet.dreamwidth.org/tag/safrut>>.

²⁹ ערוך השולחן יו"ד רעג:כד ובדבר ווי העמודים יש רבים וגדולים מראשונים ואחרונים שצעקו בכרוכיא על זה שע"י זה מקלקלים כל העמודים בשינוי האותיות לפי שצריכים לשער שיבא וויי בראש כל עמוד אמנם זה זמן רב שיצא לאור תיקון סופר אחד יפה אף נעים מסודר על וווי העמודים בלי שום דחיקת אות וכבר נהגו הסופרים לכתוב אחריו ובוודא יש נכון וישר לעשות כן ויש בזה ענין גדול.

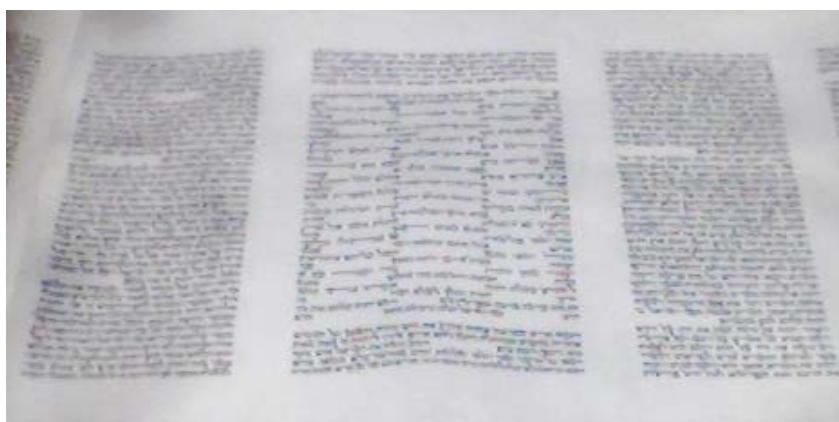
³⁰ *Aruch HaShulchan* does not say what this *inyan* is. Later in this paper we discuss possible motivation for starting every page with a *vav*.

אז ישיר in Today's *Sifrei Torah* וו העמודים

Our *Sifrei Torah* ווי העמודים differ significantly from Rambam 7:10 in that **every** *daf* has exactly 42 lines.³¹ Figure 5 is a picture of an entire יריעה of a current VHST that includes *Az Yashir*.

Figure 5

Az Yashir קלף in a Modern VH *Sefer Torah*



From this vantage point we can see that in the current VHST:

- Unlike STA, *Az Yashir* and its prior and post 5 lines take up the entire *daf*,
- Unlike STA, the entire *daf* is right and left justified to the right and left margin,
- Like STA, the width of the *Az Yashir daf* is **wider** than the other *dafim*,
- Like STA, the alternating 1-break, 2-break pattern, continues until the end
- Unlike STA, the last line starts with a single word הים (rather than מי הים) thereby maintaining the pattern of a line with a double break starting with a single word.

³¹ There are some variations in VHST but all of them have 42 lines per *daf*.

Finally, the last 2 lines on the bottom of the page are arranged slightly differently resulting in better equalization of all of the lines as shown in Table 4.

Table 4

Summary of the 5 Lines Following *Az Yasbir* in Our *Sifrei Torah*

<u>Line</u>	<u>Letters</u>	<u>Blanks</u>	<u>Total Spaces</u>
1	43	10	53
2	47	11	58
3	36	17	53
4	42	10	52
5	43	13	56

In summary, today's VHST incorporates all the desirable features we have discussed vis- a-vis *Az Yasbir*. The end result is an elegant symmetrical design that complements the beautiful words³² and except for it having only 42 lines on a page deviates only minimally from Rambam's description of the characteristics a *Sefer Torah* should have.

With respect to the numbers of lines that should be on a *daf*, HM says that Rambam's source for a 48 line minimum is based on the 48 מסעות the Jewish people traveled during their 40 years in the *midbar*. This link appears in our text of *Maseches Soferim* as follows:

בו אין פוחתין ביריעה פחות משלשה דפין ולא מוסיפין על שמונה אבל
בשיטין נותנין טעם במסעות ארבעים ושנים וברבבות של ישראל
ששים... במסעות שנאמר ויכתוב משה את מוצאיהם ברבבות ישראל
שנאמר כתב לך וגו ואת ישראל מה ישראל בששים ריבוא אף שיטה של
תורה בששים.

But this source asserts a 42 line³³ *daf* and Rashi confirms that there were only 42 stops

במדבר לג:א- למה נכתבה המסעות הללו להודיע חסדיו של מקום שאע"פ
שגזר עליהם לטלטלם ולהניעם במדבר לא תאמר שהיו נעים ומטולטלים

³² See last section of this paper for a mathematical definition of beauty and how our VH *Sefer Torah* may satisfy this requirement.

³³ MS also mentions 72 and 98 lines. Is it possible that these numbers do not refer to an entire *Sefer Torah* but to the *dafim* on which the respective topics mentioned appear?

ממסע למסע כל ארבעים שנה ולא היתה בהם מנוחה שהרי אין כאן אלא ארבעים ושתים מסעות³⁴...

Finally, Tur (1270-1340) יו"ד רעה says Rav Yehudah Barceloni advocated a 42 line ST.

Shiras Haazinu

Rambam's Description

Rambam does not offer a diagram of *Haazinu* but, as we cited at the beginning of the paper, in 7:10 he specifies the 6 lines that precede it and "the 5" that follow it. Although all our texts agree that there are 6 lines preceding it, there is some dispute as to whether the correct text has Rambam delineating the "6" lines that follow it³⁵. Whatever the correct text these lines frame *Haazinu* in much the same way the lines before and after AY frame it. These lines detail: why *Haazinu* is being said; to whom it is said; and the rewards for heeding its words. We start our discussion with Table 5 which gives the breakdown of the lines based on 5 lines following the *Shira*:

Table 5
(a)

Summary of the 6 lines that precede *Haazinu*

<u>Line</u>	<u>Letters</u>	<u>Blanks</u>	<u>Total Spaces</u>
1	29	7	36
2	27	6	33
3	29	6	35
4	31	7	38
5	32	6	38
6	28	7	35

³⁴ פרישה יו"ד רעה and רש"י מנחות ל. discuss whether there were 41, 42, 48 or 49 *masaot*?

³⁵ Maharam Di Lunzano (died 1618) offers multiple reasons and sources to prove that the correct text should say that "6" lines follow it.

(b)

Summary of the 5 lines that follow *Haaẓinu*

<u>Line</u>	<u>Letters</u>	<u>Blanks</u>	<u>Total Spaces</u>
1	57	15	72
2	54	13	67
3	54	14	68
4	54	15	69
5	26	6	32

The required line width for each of the opening 6 lines is about 36 spaces. Since the last line ends with a פתוחה, as was the case for *Aẓ Yashir*, the 6 lines should be followed by a blank line. Similarly, the width requirements for lines 1 through 4 after *Haaẓinu* are about equal. Since line 5 ends with a פתוחה even though it is shorter than the other lines the text automatically skips to the next line. However, the width requirements for the final 5 lines are considerably larger than for the opening 6 lines. If it is desirable to have these 11 lines frame *Haaẓinu* with the same right and left margins, then about half of the opening 6 lines would need to be blank spaces or have significantly elongated letters³⁶.

In addition to the 11 lines, Machon Mamre Rambam 8:11-12 says that *Haaẓinu* itself:

- Has 67 lines³⁷
- Is written in 2 columns, and
- The columns in each of the 67 rows start with prescribed words³⁸.

³⁶ I.e., the width of all of the lines would have to be 72 spaces to accommodate the longest of the 11 lines. Since the opening 5 lines only require about 36 spaces, half of the first lines would be blank spaces.

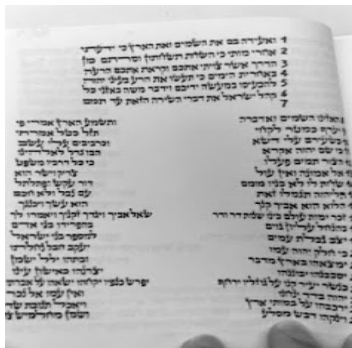
³⁷ This is also the text in Frankel's Rambam. All other standard Rambam's have "70" lines. Maharam Di Lunzani based on textual and logical arguments asserts that the correct text is "70 lines". We will discuss this configuration later.

³⁸ יא צורת שירת האזינו (דברים לב,א-מג) כל שיטה ושיטה, יש באמצעה ריוח אחד כצורת הפרשה הסתומה, ונמצאת כל שיטה חלוקה לשתיים; וכותבין אותה בשבע ושישים שיטות. ואלו הן התיבות שבראש כל שיטה ושיטה:

יב האזינו, יערף, כשעירם, כי, הצור, אל, שחת, הלה, הלוא, זכר, בהנחל, יצב, כי, ימצאהו, יסבנהו, כנשר, ה', ירכבהו, וינקהו, חמאת, בני, ודם, שמנת, וינבל, בתועבת, אלהים, לא, ותשכח, מכעס, אראה, בנים, כעסוני, בגוי, ותיקד, ותלהט, חצי, וקטב, עם, גם, אשביתה, פן, ולא, ואין, יבינו ושנים, וה', ואיבינו, ומשדמת, אשכלת, וראש, חתום, לעת, וחש, ועל, ואפס, צור, ישתו, יהי, ואין, מחצתי, כי, אם, אשיב, אשכיר, מדם, הרנינו, ונקם ואלו הן התיבות שבראש כל חצי שיטה אחרונה, שהן באמצע הדף: ותשמע, תזל, וכרכיבים, הבו, כי, צדיק,

Rambam does not say how many *dafim Haazinu* is spread over and is also silent on whether the *Shira's* right and left margins are the same as the margins of the 11 lines³⁹. Since Rambam's description requires 80 lines (5 + 1+ 67 + 1 +6), *Haazinu* should require at least 2 *dafim*. Figures 6 and 7 respectively show how *Haazinu* appears in: The Aleppo Codex (AC) which dates to the 10th century and is generally considered to be the Ben Asher work Rambam used as a guide⁴⁰, and the Leningrad Codex. These Codices agree:

- דור, עם, הוא, שאל, בהפרידו, למספר, יעקב, ובתהו, יצרנהו, יפרש, ואין, ויאכל, ושמן, עם,
עם, וישמן, ויש, יקנאהו, יזבחו, חדשים, צור, וירא, ויאמר, כי, הם, ואני, כי, ותאכל, אספה,
מזי, ושן, מחוז, אמרתי, לולי, פן, כי, לו, איכה, אם, כי, ענבמו, חמת, הלא, לי, כי, כי, כי,
ואמר, אשר, יקומו, ראו, אני, ואין, ואמרתי, ותאחו, ולמשנאי, וחרבי, מראש, כי, וכפר
- ³⁹ Maharam Di Lunzano asserts halachic reasons why the margins of the leading and following lines must have the same right and left margins of the *Shira* itself. In a Yemenite *Tikkun* below the need for extra blank spaces in the lines above the *Shira* are eliminated by making the margins of the first 6 lines narrower than those of the *Shira* itself. Maharam would reject such a design in a ST.



From <<http://lavlbor.blogspot.com/2009/09/two-columns-of-shirat-haazinu.html>>.

⁴⁰ <<http://aleppocodex.org/newsite/index.html>> For an in depths discussion of the Aleppo Codex see for example *Hakirah* 2 and a letter to the editor in *Hakirah* 3. Although AC originally included all of *Torah Shebeksav* many of the pages are now missing. A substantial part of *Devarim* including *Haazinu* is intact.

Figure 6
Haazinu in the Aleppo Codex⁴¹

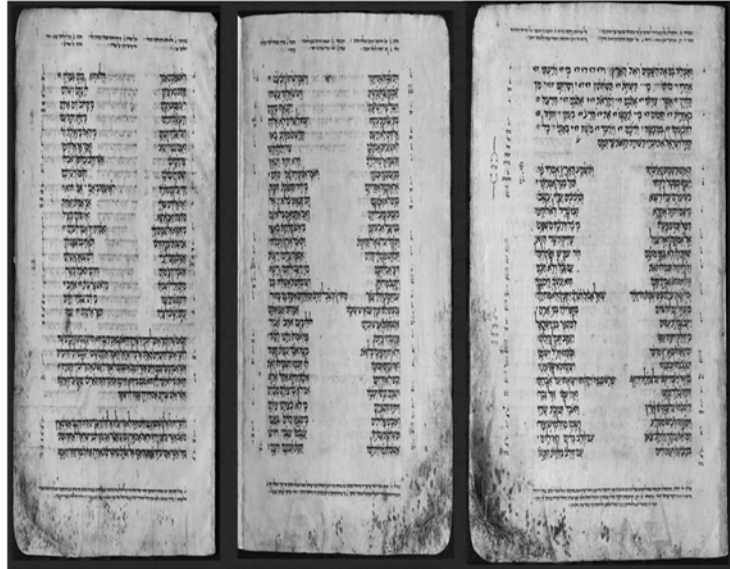


Figure 7
Haazinu in the Leningrad Codex



- On the 6 lines that precede *Haazinu*,

⁴¹ <<http://aleppocodex.org/newsite/index.html>>.

- That the first of the 6 lines starts on the top of the *daf*
- That the right and left margins of the 6 lines and the *Shira* are the same and this is accomplished by adding a significant number of blank spaces to the 6 lines,
- That the 2 columns in the *Shira* are not individually right and left justified, i.e. the right column is only right justified and the left column is only left justified.

Beyond this, the two differ dramatically. We next highlight these differences.

Haazinu in the Aleppo Codex

Description: 80 lines presented over 3 *dafim* each with 28 lines⁴² per *daf* in the following line configuration:

- 1st *daf*: 6 pre-*Shira*, blank, 21 *Shira*
- 2nd *daf*: 28 *Shira*
- 3rd *daf*: 18 *Shira*, blank, 5 post-*Shira*, blank, 3 non-*Shira*,

The 67 lines dedicated to the *Shira* conform exactly to Rambam's description. However several aspects of this third *daf* in this layout seem

⁴² Every page in AC has 28 lines. E.g., below is the page after *Haazinu*



See footnote 24 Note 2 where we mention that the number of lines in a Codex page were not necessarily meant to reflect how many lines there would be in a *Sefer Torah daf*. Thus, the 28 lines per *daf* of AC do not violate Rambam's statement of how many lines are to be on a *daf*.

problematic to us. Firstly, the second blank seems halachically unwarranted because the fifth line ends more than 9 spaces from the end of the line. Even though we have considered the possibility of the number of lines in a page differing from that of a *Sefer Torah*, it would seem reasonable to assume that nothing in the layout of a line should violate halachic prescriptions. Secondly, we understand that the blank line and the last 3 lines of the 3rd *daf* are apparently needed because without them the *daf* would have only 24 lines and this design requires 28⁴³. However, as we mentioned with respect to STB in AY, we have difficulty with the last 3 lines that have nothing to do with the *Shira* being on the same *daf*. By putting them on the *Shira daf* they end up getting the same line width arrangement as the 5 lines rather than the normal line width arrangement of the other *dafim*. Figure 8 is a presentation of the AC layout in a 2 page format with 40 lines per page and both columns right and left justified. This configuration avoids all of the problems we have just raised with the 3 page layout and offers a nearly balanced inverse mirror image with:

1st *daf*: 6 pre-*Shira*, blank, 33 *Shira*

2nd *daf*: 34 *Shira*, blank, 5 post-*Shira*.

Although the 40 lines per *daf* are below Rambam's 48 line minimum per page, we have previously argued that Rambam may very well feel that a *Shira* may deviate from the norm in order to have it stand out.⁴⁴ Figure 8 also maintains right and left hand margins for each column of the *Shira*.⁴⁵ As mentioned above, to maintain these same right and left

⁴³ Four lines with no blank line would also work.

⁴⁴ Some question, e.g., רמה, why the *Shira* design would have an unequal number of lines before and after it, i.e. 6 and 5? If in fact Rambam meant for the *Shira* to take up 2 complete pages he needed the extra line to make the sum total of lines even (i.e. 6 preceding lines+ 1 blank + 67 lines+ 1 blank+ 5 following lines= 80 lines) so that it could be split evenly between two pages.

⁴⁵ Rav Kappach in footnote 24 of his commentary on the 8th *perek* of *Hilchos Sefer Torah* argues strongly against having both columns of *Haazinu* right and left justified. Based on a question and answer his grandfather told him with respect to אריה על גבי לבינה ולבינה על גבי אריה (*Megillah* 16b), Kappach concludes that rather than having a solid blank column running through the middle of the two columns it is preferable to have certain lines in the *Shira* jut out and break the void (as in Aleppo Codex in Figure 6). His grandfather's motivating question on Gemara *Megillah* is answered in a totally different way by Meiri (Kappach does not mention this). Kappach also comes out very strongly against the positions taken by Maharam Di Lunzano with respect to *Shiras Haazinu*.

margin throughout all 80 lines requires a considerable number of extra blank spaces in the opening 6 lines. In addition, because of the significant variations in the number of letters on each of the 67 lines of the *Shira*, extra blank spaces had to be included to maintain the margins of each column as well.

As we did for AY, it is instructive to understand the way the *pesukim* of the *Shira* are divided in AC. Since the *Shira* has only 43 *pesukim*, to present it in 67 lines means that some *pesukim* take up more than one line. In general each half line is a single phrase ending in a trop that is a *mafsik*,⁴⁶ which most commonly are *sof pasuk*, *esnachta* or *katon*. The only exceptions to the single phrase rule are both columns of lines 10 and 16, which have two phrases,⁴⁷ the first of which ends with a *katon*. Table 6 gives the breakdown of each of these end *trops* for the first and second columns of the *Shira*.

Table 6

End Trop for First and Second Column of *Haazinu*

<u>Column</u>	<u><i>Sof Pasuk</i></u>	<u><i>Esnachta</i></u>	<u><i>Katon</i></u>	<u>Total</u>
1	25	18	23	66
2	18	22	24	64

⁴⁶ See footnote 18.

⁴⁷ Lines 38 and 39 have this and another difficulty which we will discuss separately.

Figure 8

Possible Two Page *Haazinu* Layout Based on AC⁴⁸

ואעידה	בם	את	השמים	ואת	הארץ	פי	ידעתי
אחרי	מותי	כי	השחת	תשחתון	וסרתם	מן	הרעה
הדרה	אשר	צויתי	אתכם	וקראת	אתכם	הרעה	י
באחרית	הימים	כי	תעשו	את	הרע	בעיני	כל
להקעיסו	במעשה	ידיכם	וידבר	מלשה	באזני	עד	תמים
קהל	ישראל	את	השירה	הזאת	עד		

(1)	האזינו	השמים	ואדברה	ותשמע	הארץ	אמרי	פי:
(2)	יערף	כמטר	לקחי	תזל	פטל	אמיתי	
(3)	פשעירם	עלי	לשא	וכרביים	עלי	עשב:	
(4)	פי	שם	אהרא	קבו	גזל	לאליהו:	
(5)	הצור	תמים	פגלו	פי	כל	דרביו	משפט
(6)	אל	אמונה	ואין	צדיק	וישר	הוא:	
(7)	שחת	לו	לא	דור	עקש	ופתלתל:	
(8)	הליי	תגמלו	את	עם	נבל	ולא	חכם
(9)	הלוא	הוא	אביה	הוא	עשה	וילכנוד:	
(10)	זכר	ימות	עולם	בינו	שנות	דרוןדר	
(11)	בהנחל	עליון	גוים	בהפרידו	בגני	אדם	
(12)	יצב	גבלת	עמים	למספר	בגני	ישראל:	
(13)	כי	תלק	יהנה	יעקב	תכל	בחתו:	
(14)	ימצאהו	בארץ	מדבר	ובתהו	זל	ישמן	
(15)	יסבבנהו	יבונהו		יצרנהו	כאישון	עינו:	
(16)	כנשר	יעיר	קפו	על	גוזליו	ירחף	
(17)	י	בדד	ינחיו	ואין	עמו	אל	גכר:
(18)	נרפכהו	על	במותי	ארץ	תנובת	שגי	
(19)	וינקהו	דבש	מפלע	ושמן	מחלמיש	צור:	
(20)	חמאת	בקר	ותלב	עם	חלב	כרים	ואילים
(21)	בגני	בשן	ועתודים	עם	חלב	פקלות	חטה
(22)	ודם	ענב	תשמה	חמר:	ישרון	ויבעט	עשהו
(23)	שמנת	עבית	כשית	ישעתו:	אלוה	בזרים	
(24)	וינבל	צור		יבנהו:	לשדים	לא	אלה
(25)	בתועבת		יכעסהו:	יזבחו	מקרב	לא	באו
(26)	אלקים	לא	ידעום	חדשים	צור	ילדה	תשי
(27)	לא	שערום	אבתים:	צור	וינאץ		
(28)	ותשפח	אל	מחלקה:	ויאמר	אסתירה	פני	מהם
(29)	מבעס	בגיו	ובנתיו:	כי	דור	תהפכת	המה
(30)	אראה	מה	אחריתם	הם	קנאוני	בלא	אל
(31)	בני	לא	בם:	ואני	אקניאם	בלא	עם
(32)	קעסוני		בהבליהם	כי	אש	קדחה	כאפי
(33)	בגיו	נבל	אכעיסם:	ותאכל	ארץ		
(34)	ותיקד	עד	שאול	תחתית			

⁴⁸ We have numbered the lines and included the *trop* in the *Shira* itself for later reference.

רעות	עלימו	אספה	הרים:	מוסדי	ותלהט	(35)
רשף	ולחמי	רעב	בם:	אכלה-	חצוי	(36)
בם	אשלה-	בהמת	מריגי		גקטב	(37)
מחול	תשכל-	קרוב ומתדירים	עפר:	תמת	עם-	(38)
אפאיהם	גם-	איהם	איש שיבה:	יונק עם-	בתולה	(39)
אגור	אויב	כעס	זכרם:	מאנוש	אשגייה	(40)
רמה	יגנו	יאמרו	צרימו	יגרו	פן-	(41)
המה	אבד עצות	גוי	זאת:	פגל	ולא יהנה	(42)
זאת	ישפילו	תכמו	בהם	תבונה:	ואיו	(43)
אלף	אחד	ירדף	לאחריתם:		יביו	(44)
מכרם	צנרם	כי-	רבה	יגיסו	ושנים	(45)
צנרם	כצנרו	לא	הסגרים:		ויי	(46)
גפנם	סדם	מגפן	פלים:		ואיביו	(47)
רוש	ענבי-	ענבמו	עמרה		ומשדמת	(48)
יגם	תניגם	תמת	למו:	מרת	אשקלת	(49)
עמדי	במס	הוא	אכור:	פתנים	וראש	(50)
ושלים	נקם	לי	באזרותי:		חתום	(51)
אידם	יום	קרוב	רגלם	תמוט	לעת	(52)
עמו	יהנה	יגיו	למו:	עתדת	וקחש	(53)
יד	אזלת	כי-	יתנחם	עבדיו	ועל-	(54)
אלהימו	אי	ואמר	ועזוב:	עצור	ואפס	(55)
יאכלו	זכתימו	חלב	בו:	תסיו	צור	(56)
ויעזרכם		לקומו	נסיכם	יין	ישתו	(57)
הוא	אני	כי	סתרה:	עליכם	יהי	(58)
ואחיה	אמית	אני	עמדי	אלהים	ואיו	(59)
מציל:	מזדי	ואיו	ארפא	ואני	מתצתי	(60)
לעלם:	אנכי	ותמרת	שמים יגדי	אל-	אשא	(61)
יגדי	במשפט	והתנז	ברק	שנותי	אם-	(62)
אשלים:		ולמשנאי	לצרי	נקם	אשיב	(63)
בשר	תאכל	ותרבי	מדם	חצוי	אשקיר	(64)
אויב:	פרעות	מראש	ושבחה	תלל	מדם	(65)
יקום	עבדיו	כי	עמו	גוים	הרנינו	(66)
עמו:	אדמתו	וכפר	לצרי	ישיב	ונקם	(67)

ויבא מלשה וידבר את כל דברי השירה הזאת באזני העם הוא והושע בן נון ויכל מלשה לדבר את כל הדברים האלה אל כל ישראל ויאמר אליהם שמימו לבבכם לכל הדברים אשר אנכי מעיד בכם היום אשר תצגום את בניכם לשמר לעשות את כל דברי התורה הזאת כי לא דבר רק הוא מכם כי הוא חייכם ובדבר הזה תאריכו ימים על האדמה אשר אתם עבדים את ה' אלהיכם לרשתה

The exceptions to this rule are:

- * Line 20: 1st column ends in רביע, 2nd Column ends in מהפך.
- * Line 38: 2nd Column ends in פשטא.
- * Line 59: 2nd Column ends in רביע.

While a רביע can denote the end of a phrase a מהפך and a פשטא do not. Line 38 is the most non-conforming line in that it includes a katon and an *esnachta* in one half and ends with a *pashta*. AC's breakup of the *Shira* lines conforms to Rambam's description of the starting word of each line and column (see footnote 31). However, Rambam only says that the first column of lines 38, 39 and 40 starts respectively with עם, אשביתה גם, and the second column with לולי, אמרתי, מחוץ. Had AC moved the words גם בחור from the end of line 38 to the beginning of line 39, it would have still satisfied Rambam's description, been grammatically better and evened out the size of the lines to a greater extent⁴⁹.

***Haazinu* in the Leningrad Codex**

Description: 50 lines presented over 2 *dafim* each with 28 lines in the following line configuration:

- 1st *daf*: 6 pre.*Shira*, blank, 20 *Shira*
- 2nd *daf*: 17 *Shira*, blank, 5 post.*Shira*, 5 non.*Shira*.

It is not possible to reconcile this with Rambam's description because the *Shira* itself is given in 37 lines, not Rambam's 67.

***Vavei Haamudim* Design**

The *Haazinu* text we have been using thus far is from Machon Mamre. However, standard Rambams say the *Shira* has 70 lines and Maharam Di Lunzano agrees. The current VH *Sifrei Torah*, Figure 9, offers this 70 line *Shira* with the extra 3 lines coming from the separation of the two phrases of lines 10, 16, and 38 into separate columns based on grammatical consistency. All lines now end in a trop that is a *mafsik* and

- The columns of the *Shira* have the same right and left margins,
- The *Shira* is followed by 6 lines, not 5,

⁴⁹ The way AC has it the second column of line 38 has 28 letters and requires 6 blanks (34 positions over all), while if it is moved to the next line, the first column of line 39 has 26 words and requires 7 blanks (33 positions overall).

Table 7

Summary of the 6 lines that Follow *Haazinu* in *Vavei Haamudim Sifrei Torah*

<u>Line</u>	<u>Letters</u>	<u>Blanks</u>	<u>Total Spaces</u>
1	34	8	42
2	31	8	39
3	32	7	39
4	32	6	38
5	31	8	39
6	34	10	44

To equalize the margins of the first 5 lines with these lines only requires 44 spaces (instead of 72). This is easily done by adding a minimal number of blank spaces (about 8) per line. The longest lines of the *Shira* itself are also much reduced, and as can be seen in the picture, now require only a minimal number of extra blank spaces to maintain uniformity. The end result is a *Shira* that is as pleasant to look at as it is to hear.

Line Rearrangement in VH *Sifrei Torah*

In this section we will delineate how VH expanded the 67 lines of the AC *Haazinu* to 70 and addressed all of the problems we mentioned concerning the AC layout⁵².

First Change: Line 10 in AC was distributed on 2 lines, i.e.,

10 זכר ימות עולם בינו שנות דר- וְדָר שָׂאֵל אֲבִיךָ וַיִּגְדֶּה זְמַנֶּיהָ וַיֹּאמְרוּ לָהּ:

became

זכר ימות עולם בינו שנות דר- וְדָר
שָׂאֵל אֲבִיךָ וַיִּגְדֶּה זְמַנֶּיהָ וַיֹּאמְרוּ לָהּ:

Second Change: Line 16 in AC was distributed on 2 lines, i.e.,

16 כְּנֶשֶׁר יַעִיר קִנּוּ עַל- גּוֹזְלֵיו יִרְחֹף יִפְרֹשׁ כְּנָפָיו יִקְחֵהוּ יִשְׂאֵהוּ עַל- אֲבָרְתָו:

became

כְּנֶשֶׁר יַעִיר קִנּוּ עַל- גּוֹזְלֵיו יִרְחֹף
יִפְרֹשׁ כְּנָפָיו יִקְחֵהוּ יִשְׂאֵהוּ עַל- אֲבָרְתָו:

Third Change: ואילים and the end of line 20 in AC was moved to the next line, i.e.,

⁵² I.e., grammar and spacing.

(20) תמאת בקר וקלב צאן	עם- קלים	קלים	ואילים
(21) תמאת בקר וקלב צאן	עם- קלים	קלים	ואילים

became

תמאת בקר וקלב צאן	עם- קלים
ואילים בקר וקלב צאן	עם- קלים

Fourth Change: Lines 38 and 39 in AC was distributed on 3 lines, i.e.,

(38) עם- תמת זחלי עפר:	מחול תשכל- תרב ומתדרים אימה גם-בחור
(39) גם- בתולה יונק עם- איש שיבה:	אמרתי
(40) אשביתה מאנוש זכרם:	לולי קעס אויב אגור

became

עם- תמת זחלי עפר:	מחול תשכל- תרב
ומתדרים אימה	גם-בחור גם-בתולה
יונק עם- איש שיבה:	אמרתי

Comparing *Az Yashir*, *Haazinu* and the Entire Torah in VH *Sifrei Torah*

Az Yashir and *Haazinu* are both *Shiros* but their presentations are different in pattern and style. We would like to make one final point about the widths of each. As we have seen, in VH *Sifrei Torah*, the opening 5 lines of AY require 51,49,53,50,50 spaces respectively to accommodate letters and required spaces while the closing 5 lines respectively require 53, 58, 53, 52, 56. *Haazinu's* opening 6 lines require 36, 33, 35, 38, 38, 35 combined spaces and the closing 6 lines require 42, 39, 39, 38, 39, 44. For the rest of the VH *Sefer Torah* we can roughly calculate line width by:

- i) Adding the number of letters in the ST: 304,805 to
- ii) The number of words in the ST: 79,980 to get
- iii) Required number of spaces in the ST: 384,785 Next,
- iv) Multiply the number of pages in the ST: 245 by
- v) The number of lines per page: 42 to get
- vi) The number of lines in the ST: 10,290
- vii) Dividing iii) by vi) yields on average: 37.4 spaces per line.

Thus the *Haazinu daf* width and length fits exactly in with the regular Torah pagination scheme while *Az Yashir* is presented in a much larger *daf* (see Figure 5) befitting its subject, the praise of *HaShem*.

Justification of *Vavei Haamudim*

In this paper we have discussed the two *shiros* in the Torah, *Az Yashir* and *Haazinu*, as the Rambam describes them and as they have been presented over the last 1,000 years in different *Sefer Torah* and codices. We have also discussed in great detail the ancient as well as current *Vavei Haamudim Sifrei Torah* and shown how the current VH attempts to beautify some of the visual anomalies evident in other ST. While there are many admonitions as to why not to do VH, very little is available as to why it should be done. What is the objective or symbolism involved in starting every *daf* with a *vav* other than it having a catchy name from *Shemos* 27:10 which discusses the hooks on which the curtains of the Mishkan Courtyard hung, i.e.,

ט וְעָשִׂיתָ, אֵת הַצֵּר הַמְשֻׁכָּן--לְפָאֵת 9 And you should make the court of the Mishkan: for the south side southward there shall be hangings for the court of fine twined linen a hundred cubits long for one side.

י וְעָמְדָיו עֲשָׂרִים, וְאֲדָנֵיהֶם עֲשָׂרִים 10 And the pillars thereof shall be twenty, and their sockets twenty, of brass; the hooks of the pillars and their fillets shall be of silver.

Hida (1724-1806) at first indeed expresses wonder how the VH custom survived all of its detractors and became a widespread custom even though respected authorities forbid it? He, however, concludes that ציוני (1340-1410) says that the reason for VH is a סוד גדול and the custom should not be abolished.⁵³ T'ziyoni's comments on VH appear in ספר ציוני on *Parshas Teruma* and include practical and mathematical as well as mystical justification.

והוא סוד בלוחות הדומים לב' ווין וכן ספר תורה נקרא ווי העמודים בפסוק ואת האלף ושבע המאות וחמשה ושבעים עשה וויים לעמודים וזהו כלל חשבון האלף בית עם מנצ"פך מזה הטעם הנהיגו הקדמונים לכתוב ספר תורה ווי העמודים...⁵⁴

⁵³ ברכי יוסף יו"ד סימן רעג ועתה ראיתי בס' מקום שמואל בחידושיו לי"ד בדין זה כתב שמצא בציוני שהוא סוד גדול לכתוב ווי העמודים ואין לבטל המנהג ע"ש וזהו שאמרו הנה להם לישראל אם אינם נביאים בני נביאים הם ומנהגם של ישראל תורה היא

⁵⁴ <http://www.hebrewbooks.org/pdfpager.aspx?req=45052&st=&pgnum=109>:

The first reason is that the *vavim* resemble the *לווחות* in shape (i.e. 2 columns). His second comment is a mathematical relationship between the amount of silver in the *vavim* in the Mishkan, i.e. 1775, and the numerical equivalent of all of the letters in the Hebrew alphabet, including the end letters, i.e.

<u>Letter Numerical Value</u>			
א	1	מ	40
ב	2	ם	40
ג	3	נ	50
ד	4	ן	50
ה	5	ס	60
ו	6	ע	70
ז	7	פ	80
ח	8	ף	80
ט	9	צ	90
י	10	ץ	90
כ	20	ק	100
ך	20	ר	200
ל	30	ש	300
		ת	<u>400</u>
			1775

The mathematics is correct but what is the connection between starting every page with a *vav* and this count? We suggest this may be related to the question of whether the Ashuri script we use in our *Sefer Torah* was the script of the original *Luchos*.

פנהדרין כב. למה נקרא אשורית שעלה עמהם מאשור תניא רבי אומר בתחלה בכתב זה ניתנה תורה לישראל כיון שחטאו נהפך להן לרועץ כיון שחזרו בהן החזירו להם שנאמר (זכריה ט) שובו לביצרון אסירי התקוה גם היום מגיד משנה אשיב לך למה נקרא שמה אשורית שמאושרת בכתב רשב"א אומר משום ר' אליעזר בן פרטא שאמר משום רבי אלעזר המודעי כתב זה לא נשתנה כל עיקר שנאמר (שמות כז) ווי העמודים מה עמודים לא נשתנו אף וויים לא נשתנו.

According to Rebbe Shimon ben Elazar, the proof that Ashuri was the original script is Shemos 27:10. The *Yerushalmi* expresses this proof as follows:

ירושלמי מגילה א:ט תני רבי שמעון בן אלעזר אומר משום רבי אלעזר בן פרטא שאמר משום רבי לעזר המודעי כתב אשורי ניתנה התורה ומה טעמא (שמות כז) ווי העמודים שיהו וויים של תורה דומים לעמודים.

The letter *vav* is thus the proof text that all our letters are correct and should be up and in front on every page.

Note: Rashi in *Sanhedrin* explains that the proof is based on the *vavim* in the *pasuk* referring to hooks on which the curtains hung and the “*vav*” in Ashuri looks like a hook (i.e., a horizontal line with a little projection) :

א ב ג ד ה ו ז ח ט י כ ל מ נ ן ס ע פ צ ן ק ר ש ת

Appendix

Significance of the Content of the Introductory and Postscript Lines

Rambam's presentation of *Az Yashir* in the context of certain lines that precede and follow it indicate that these lines must in some way be directly related to the *Shira*. As mentioned before the introductory 5 lines start in the middle of *Shemos* 14:28 and continue for another 3 *pesukim* before the start of the actual *Shira*:

הַבָּאִים אַחֲרֵיהֶם בַּיָּם לֹא נִשְׂאָר בָּהֶם עַד אֶתֵּד: וּבְנֵי יִשְׂרָאֵל הִלְכוּ
בִּבְשָׁה בְּתוֹךְ הַיָּם וְהַיָּם לָהֶם חֲמָה מִיַּמִּינָם וּמִשְׂמָאלָם: וַיִּשְׁע
יְיָ בַּיּוֹם הַהוּא אֶת יִשְׂרָאֵל מִיַּד מִצְרַיִם וַיִּרְא יִשְׂרָאֵל אֶת מִצְרַיִם
מֵעַל שַׁפַּת הַיָּם: וַיִּרְא יִשְׂרָאֵל אֶת הַיָּד הַגְּדוֹלָה אֲשֶׁר עָשָׂה יְיָ
בְּמִצְרַיִם וַיִּירָאוּ הָעָם אֶת יְיָ וַיֹּאמְרוּ בֵּינֵינוּ וּבְמִשְׁחָה עֲבָדוּ:

The relationship of the 14:29-14:31 to the *Shira* is clear. The relevance of **הבאים** is less so. Similarly the 5 lines that follow the *Shira* cover 4 *pesukim*.

וַתִּקַּח מִרְיָם הַנְּבִיאָה אֲחוֹת אֹהֶרֶן אֶת הַתֶּף בְּיָדָהּ וַתִּצְאֵן כָּל הַנָּשִׁים
אַחֲרֶיהָ בְּתַפִּים וּבְמַחֲלֹת: וַתַּעַן לָהֶם מִרְיָם שִׁירוּ לַיְיָ כִּי גָאָה גָאָה
סוּס וְרָכְבוֹ רָמָה בַּיָּם: וַיִּסַּע מֹשֶׁה אֶת יִשְׂרָאֵל מִיַּם סוּף
וַיִּצְאוּ אֶל מִדְבַּר שׁוּר וַיִּלְכוּ שְׁלֹשֶׁת יָמִים בְּמִדְבַּר וְלֹא מָצְאוּ מַיִם
וַיִּבְאוּ מִרְתָּה וְלֹא יָכְלוּ לְשַׁתֵּת מִיַּם מִמֶּרְהָ כִּי מָרִים הֵם עַל כֵּן (קָרָא שְׁמָהּ מֶרְהָ)

The relevance of Miriam singing Hashem's praise with the Jewish women is again self-evident. What seems perplexing is the inclusion of the incident at Mara where no drinking water was found and which ultimately leads to the unfortunate complaining on the part of the people (i.e., *pasuk* 15:24 which is left out of these lines)? How are these last two *pesukim* tied into the *Shira*?

From a literary perspective we suggest that the attempt here is to create poetic symmetry to the *Shira*'s introduction and postscript. The first introductory line starts with **הבאים** and the last postscript line starts with **ויבאו**. The second introductory line relates how the Jews went in dryness amidst water, and the next to last postscript line talks about the Jews needing to find water in a place of dryness. The beginning of the *Mara* story thus acts as the symmetric counterpoint to the introductory five lines where water had just destroyed men and chariots. The waters of *Mara* also involved unsavory consequences but that is not included in the designated postscript lines. The *Shira* song starts and ends with potentially negative issues relating to water but focuses only on the good

that Hashem did for the Jewish people and how they in turn sang his praise. The question then is how much of the *Mara* story should be included in the concluding 5 lines? MMT completes the *pasuk* with the naming of the place as Mara and stops before airing the complaints by the people. STB and STA prefer not to even mention the word Mara. The only source we have cited that retains the words וילנו העם is the Leningrad Codex, but as we point out throughout the paper it is highly unlikely that this was a *Sefer Torah* Rambam used as his model.