

On the morning of April 8, 2009, Erev Pesach 5769, Jews around the world will recite Bircas HaChammah, the blessing marking the Sun's return to the exact place it occupied on the fourth day of Creation on the same day and at the same hour that the sun began to shine in the primordial heavens.

It is an event that occurs only once every 28 years.

ArtScroll is proud to be the publisher of

Bircas HaChammah

Blessing of the Sun – Renewal of Creation

by Rabbi J. David Bleich

the comprehensive work that offerers a thorough explanation of this observance, and presents its many laws, customs, and prayers.

This excerpt from the book presents a small selection of the most pertinent laws and prayers.



Selected Laws

- A quorum of ten is not required to recite *Bircas Hachammah*. It is, however, preferable to recite the blessing in the company of a large assemblage because *בְּרָב עִם הַדֶּרֶת מְלֶכֶךְ*, *the glory of the King is in the multitude of the populace*.
- Some authorities maintain that it is preferable to pronounce the blessing immediately upon seeing the sun in the morning (even before reciting the morning prayers) even if this entails pronouncing the blessing in private. Others maintain that it is preferable to pronounce the blessing in the company of a large assemblage and that, for this reason, the blessing should be delayed and pronounced outside the synagogue after morning services. If clouds threaten to obscure the sun, all agree that the blessing should be recited without delay.
- When the blessing is recited after morning services, some have the custom of reciting the blessing while yet attired in *tallis* and *tefillin*.
- The blessing should be recited while standing. It is proper to wear dignified clothing while reciting the blessing.
- The blessing may be recited while standing under a roof or even when observing the sun through a window from inside a building.
- The blessing should be pronounced as early in the day as possible but should not be delayed later than the end of the third hour. In case of delay, or if the sun is overcast by clouds earlier in the day, the blessing, according to some authorities, may be recited until midday.
- The blessing should not be recited if the sun is obscured by clouds. However, the blessing

may be recited on a cloudy day if the outline of the sun can be perceived beneath the clouds or if any portion of the sun is visible between the clouds.

- If the sun is completely obscured throughout the morning, the blessing should be delayed until shortly before midday. At that time the blessing should be recited with the omission of *shem umalchus* (the words אֱלֹהֵינוּ מֶלֶךְ הָעוֹלָם ה', *HASHEM, our God, King of the universe*). The blessing should then be pronounced as follows: בְּרוּךְ אַתָּה עוֹשֵׂה מַעֲשֵׂה בְּרֵאשִׁית, *Blessed are You who makes the work of creation*. Once the blessing has been recited in this manner, regardless of the hour at which it was recited, the full text of the blessing should not be repeated, even if the sun becomes visible before midday.
- Women may recite the blessing, although in some places it was the custom for women not to do so.

Selected Prayers

סדר תפילות

Based on the practice of the *Chasam Sofer*, as cited in *Mishnah Berurah* (228:9).

A comprehensive collection of prayers, with translation and commentary, appears in the book *Bircas HaChammah*.

Psalms 148:1-6

תהלים קמח א-ו

Halleluyah! Praise HASHEM from the heavens; praise Him in the heights. ²Praise Him, all His angels; praise Him, all His legions. ³Praise Him, sun and moon; praise Him, all bright stars. ⁴Praise Him, the most exalted of the heavens and the waters that are above the heavens. ⁵Let them praise the Name of HASHEM, for He commanded and they were created. ⁶And He established them forever and ever, He issued a decree that will not change.

הַלְלוּ-יָהּ, הַלְלוּ אֶת ה' מִן הַשָּׁמַיִם,
הַלְלוּהוּ בַמְרוֹמִים. הַלְלוּהוּ
כָּל מַלְאָכָיו, הַלְלוּהוּ כָּל-צְבָאוֹ. הַלְלוּהוּ
שֶׁמֶשׁ וְיָרֵחַ, הַלְלוּהוּ כָּל כּוֹכְבֵי אוֹר.
הַלְלוּהוּ שְׁמֵי הַשָּׁמַיִם, וְהַמַּיִם אֲשֶׁר מֵעַל
הַשָּׁמַיִם. יִהְלְלוּ אֶת שֵׁם ה', כִּי הוּא צָוָה
וַנִּבְרָאוּ. וַיַּעֲמִידֵם לְעַד לְעוֹלָם, חֵק נֶתַן
וְלֹא יַעֲבוֹר.

The Blessing

נוסח הברכה

Blessed are You, HASHEM our God,
King of the universe,
who makes the work of creation.

בְּרוּךְ אַתָּה ה' אֱלֹהֵינוּ
מֶלֶךְ הָעוֹלָם,
עוֹשֵׂה מַעֲשֵׂה בְּרֵאשִׁית.

God, Master over all created things, blessed and praised in the mouth of every soul. His greatness and goodness fill the universe; knowledge and understanding surround Him.

He Who is exalted above the holy beings, and is adorned with glory above the chariot. Purity and uprightness are before His throne; lovingkindness and mercy are before His glory.

Good are the luminaries which our God has created; He formed them with knowledge, insight and reason. Strength and power has He placed in them, that they

אֵל אֲרוֹן עַל כָּל הַמַּעֲשִׂים, בְּרוּךְ וּמְבָרָךְ
בְּפִי כָּל-נִשְׁמָה, גָּדְלוֹ וְטוֹבוֹ מְלֵא
עוֹלָם, דָּעַת וְתְבוּנָה סוֹבְבִים אוֹתוֹ.
הַמְתַּגָּאָה עַל-חַיּוֹת הַקִּדְשׁ, וְנִהְדָּר בְּכְבוֹד
עַל-הַמְרֻכָּבָה, זְכוּת וּמִישׁוֹר לְפָנָי כְּסֹאוֹ,
חֶסֶד וְרַחֲמִים לְפָנָי כְּבוֹדוֹ. טוֹבִים מְאוּרֹת
שֶׁבְּרָא אֱלֹהֵינוּ, יִצְרָם בְּדַעַת בְּבִינָה
וּבְהַשְׁכָּל. כֹּחַ וְגִבּוֹרָה נֶתַן בָּהֶם, לְהַיּוֹת

may have dominion throughout the world.

Full of luster and radiating brightness, beautiful is their luster throughout the universe. Joyous in their rising and exultant in their setting, they perform with awe the will of their possessor.

Glory and honor they give to His Name, jubilation and song to the mention of His sovereignty. He called to the sun and light shined; He observed and ordained the form of the moon.

All the hosts on high render praise unto Him; the Seraphim and Ophanim and holy beings render glory and greatness.

Psalms 19

¹ For the conductor, a psalm by David. ² The heavens declare the glory of God, and the firmament tells of His handiwork. ³ Day following day utters speech, and night following night declares knowledge. ⁴ There is no speech and there are no words; their sound is not heard. ⁵ [But] their line goes forth throughout the earth, and their words reach the end of the inhabited world. In their midst He has set up a tent for the sun, ⁶ which is like a groom emerging from his bridal chamber, it rejoices like a powerful warrior to run the course. ⁷ Its source is the end of the heavens and its circuit is to their end; nothing is hidden from its heat. ⁸ The Torah of HASHEM is perfect, restoring the soul; the testimony of HASHEM is trustworthy, making the simple one wise; ⁹ the precepts of HASHEM are upright, gladdening the heart; the commandment of HASHEM is clear, enlightening the eyes; ¹⁰ the fear of HASHEM is pure, enduring forever; the judgments of HASHEM are true, altogether righteous. ¹¹ They are more desirable than gold, than even much fine gold; and sweeter than honey, and dripping of the honeycombs. ¹² Also, when Your servant is scrupulous in them, in observing them there is great reward. ¹³ Who can discern mistakes? Cleanse me from unperceived faults. ¹⁴ Also from intentional sins restrain Your servant; let them not rule me, then I shall be perfect; and I will be cleansed of great transgression. ¹⁵ May the expressions of my mouth and the thoughts of my heart find favor before You, HASHEM, my Rock and my Redeemer.

¹ It is our duty to praise the Master of all, to ascribe greatness to the Molder of primeval creation, for He has not made us like the nations of the lands and has not emplaced us like the families

מוֹשְׁלִים בְּקֶרֶב תֵּבֵל. מְלֵאִים זֵיו וּמְפִיקִים נְגִהָה, נֶאֱדָה זֵיוֹם בְּכָל־הָעוֹלָם, שְׂמֵחִים בְּצִאתָם וְשׂוֹשִׁים בְּבוֹאָם, עֹשִׂים בְּאֵימָה רְצוֹן קוֹנָם. פָּאֵר וְכְבוֹד נוֹתְנִים לְשִׁמוֹ, צִהְלָה וְרִנָּה לְזִכָּר מַלְכוּתוֹ, קָרָא לְשִׁמְשׁ וַיִּזְרַח אֹר, רָאָה וְהִתְקִין צוֹרֵת הַלְבָנָה. שָׁבַח נוֹתְנִים לוֹ כָּל צָבָא מְרוֹם, תִּפְאָרֶת וּגְדֻלָּה, שְׂרָפִים וְאוֹפָנִים וְחַיּוֹת הַקֹּדֶשׁ.

תהלים יט

לְמַנְצַח מְזִמּוֹר לְדָוִד. הַשָּׁמַיִם מְסַפְּרִים כְּבוֹד־אֱלֹהִים, וּמַעֲשֵׂה יָדָיו מְגִיד הַרְקִיעַ. יוֹם לְיוֹם יִבְיַע אָמַר, וְלַיְלָה לְלַיְלָה יַחְוֶה־דַּעַת. אֵין־אָמַר וְאֵין דְּבָרִים, בְּלִי נִשְׁמַע קוֹלָם. בְּכָל־הָאָרֶץ יֵצֵא קוֹם וּבִקְצֵה תֵבֵל מְלִיָּהֶם, לְשִׁמְשׁ שָׁם־אֶהֱלֶבְהֶם. וְהוּא כֹחֶתֶן יֵצֵא מִחֶפְתּוֹ, יִשִּׁישׁ כְּגִבּוֹר לְרוּץ אַרְחָה. מְקַצֵּה הַשָּׁמַיִם מוֹצֵאוֹ, וְתִקּוּפָתּוֹ עַל־קִצּוֹתָם; וְאֵין נִסְתָּר מִחֶמְתּוֹ. תּוֹרַת ה' תְּמִימָה, מְשִׁיבַת נֶפֶשׁ; עֵדוּת ה' נְאֻמָּנָה, מְחַכֶּימַת פֶּתִי. פְּקוּדֵי ה' יִשְׂרִים, מְשַׁמְּחֵי־לֵב; מִצְוֹת ה' בְּרָה, מְאִירַת עֵינַיִם. יִרְאֵת ה' טְהוֹרָה, עוֹמְדַת לְעַד; מְשַׁפְּטֵי ה' אָמֶת, צְדָקוֹ יַחְדּוֹ. הִנְחָמְדִים מְזַהֵב וּמְפֹז רַב, וּמְתוֹקִים מְדַבֵּשׁ וְנֹפֶת צוֹפִים. גַּם־עֲבָדְךָ נִזְהָר בָּהֶם, בְּשִׁמְרָם עֲקֹב רַב. שְׂגִיאוֹת מִי בֵּין מְנַסְתְּרוֹת נִקְנִי גַם מְזִדִּים חֲשֹׁף עֲבָדְךָ, אֶל־יִמְשְׁלוּ־בִי, אֲזִי אֵיתָם, וְנִקִּיתִי מִפֶּשַׁע רַב. יִהְיוּ לְרְצוֹן אִמְרֵי פִי, וְהִגִּיוֹן לְבִי לְפָנֶיךָ, ה' צוּרֵי וּגְאֻלִּי.

עֲלֵינוּ לְשַׁבַּח לְאֶדְוֹן הַכֹּל, לְתַת גְּדֻלָּה לְיוֹצֵר בְּרֵאשִׁית, שְׁלֵא עֲשֵׂנוּ כְּגוֹיֵי הָאֲרָצוֹת, וְלֵא שְׁמָנוּ כְּמִשְׁפָּחוֹת

of the earth; for He has not assigned our portion like theirs nor our lot like all their multitudes. For they bow to vanity and emptiness and pray to a god which helps not.

But we bend our knees, bow, and acknowledge our thanks before the King Who reigns over kings, the Holy One, Blessed is He. He stretches out heaven and establishes earth's foundation, the seat of His homage is in the heavens above and His powerful Presence is in the loftiest heights. He is our God and there is none other. True is our King, there is nothing beside Him, as it is written in His Torah: "You are to know this day and take to your heart that HASHEM is the only God — in heaven above and on the earth below — there is none other" (Deuteronomy 4:39).

And therefore we put our hope in You, HASHEM, our God, that we may soon see Your mighty splendor, to remove detestable idolatry from the earth, and false gods will be utterly cut off, to perfect the universe through the Almighty's sovereignty. Then all humanity will call upon Your Name, to turn all the earth's wicked toward You. All the world's inhabitants will recognize and know that to You every knee should bend, every tongue should swear. Before You, HASHEM, our God, they will bend every knee and cast themselves down, and to the glory of Your Name they will render homage, and they will all accept upon themselves the yoke of Your kingship that You may reign over them soon and eternally. For the kingdom is Yours and You will reign for all eternity in glory, as it is written in Your Torah: "HASHEM shall reign for all eternity" (Exodus 15:18). And it is said: "HASHEM will be King over all the world — on that day HASHEM will be One and His Name will be One" (Zechariah 14:9).

הַאֲדָמָה. שְׁלֹא שָׁם חִלְקֵנוּ בָהֶם, וְגוֹרְלֵנוּ
בְּכָל הַמוֹנִים. שֶׁהֵם מִשְׁתַּחֲוִים לְהֶבֶל וְרִיק,
וּמִתְפַּלְלִים אֶל אֵל לֹא יוֹשִׁיעַ.

וְאֲנַחְנוּ כּוֹרְעִים וּמִשְׁתַּחֲוִים וּמוֹדִים,
לְפָנֵי מֶלֶךְ מַלְכֵי הַמַּלְכִּים הַקְּדוֹשׁ בְּרוּךְ
הוּא.

שֶׁהוּא נוֹטֵה וְיֹסֵד אֶרֶץ, וּמוֹשֵׁב
יְקָרוּ בַשָּׁמַיִם מִמַּעַל, וְשׂוֹכֵנֵת עִזּוֹ בְּגִבְהֵי
מְרוֹמִים. הוּא אֵל-הַיְנוּ, אֵין עוֹד. אָמֵת
מִלְכֵנוּ, אָפֶס זוֹלָתוֹ, כְּכַתוּב בְּתוֹרָתוֹ:
וַיִּדְעַת הַיּוֹם וְהִשְׁבַּת אֶל לִבָּבָהּ, כִּי ה'
הוּא הָאֵל-הַיִּם בַּשָּׁמַיִם מִמַּעַל וְעַל הָאָרֶץ
מִתַּחַת, אֵין עוֹד.

עַל בֵּן נִקְוָה לָּךְ ה' אֵל-הַיְנוּ לְרֵאוֹת
מִהֲרָה בְּתַפְאֶרֶת עֲוֹךְ, לְהַעֲבִיר
גְּלוּלִים מִן הָאָרֶץ, וְהִאֲלִילִים כְּרוֹת
יִבְרָתוֹן, לְתַקֵּן עוֹלָם בְּמַלְכוּת שְׁ-יָי. וְכָל
בְּנֵי בֶשֶׁר יִקְרְאוּ בַשִּׁמְיָהּ, לְהַפְנוֹת אֵלֶיךָ כָּל
רִשְׁעֵי אֶרֶץ. יִפִּירוּ וַיִּדְעוּ כָּל יוֹשְׁבֵי תַבַּל,
כִּי לָךְ תִּכְרַע כָּל בָּרָה, תִּשָּׁבַע כָּל לָשׁוֹן.
לְפָנֶיךָ ה' אֵל-הַיְנוּ יִכְרְעוּ וַיִּפְּלוּ, וְלִכְבוֹד
שִׁמְךָ יִקָּר יִתְנוּ. וַיִּקְבְּלוּ כָּלֵם אֶת עוֹלָם
מִלְכוּתְךָ, וְתִמְלֹךְ עֲלֵיהֶם מִהֲרָה לְעוֹלָם
וָעֵד. כִּי הַמַּלְכוּת שְׁלֹךְ הִיא וְלְעוֹלָמִי עַד
תִּמְלוֹךְ בְּכָבוֹד, כְּכַתוּב בְּתוֹרָתְךָ. ה' יִמְלֹךְ
לְעֹלָם וָעֵד. וְנֶאֱמַר. וְהָיָה ה' לְמֶלֶךְ עַל כָּל
הָאָרֶץ, בַּיּוֹם הַהוּא יִהְיֶה ה' אֶחָד וְשִׁמוֹ
אֶחָד.

In the presence of a Minyan, Kaddish is recited

Charts of *Zemanei Bircas haChammah*

Determination of correct *zemanim* or times as related to various *mitzvos* is an extremely complex area of Halachah. The principles governing the calculation of times presented in these tables are, of course, of significance not only with regard to *Bircas haChammah* but also with regard to determining the period during which *Shema* may be recited, the termination of *Shabbos* and *Yom Tov*, as well as manifold other aspects of Halachah.

The tables presented here were prepared by Vaad L'Chizuk Kiyum Hamitzvoth. Comprehensive daily halachic time charts for any city in the world are available from Vaad L'Chizuk Kiyum Hamitzvoth, Brooklyn, N.Y. (718)851-1314.

Zemanei Bircas haChammah

All times for cities in North America, Europe and Israel are given in Daylight Saving Time. Times for all other cities are given in Standard Time.

TABLE A

I. Sunrise is the earliest time at which *Bircas haChammah* may be recited. The times here given represent the first appearance of the crest of the sun over the horizon. [According to *Tekufas haChammah uBirchosah* sunrise for purposes of *Bircas haChammah* is the earliest time at which the full circumference of the sun is visible. This occurs approximately 2 ½ minutes later than sunrise as here indicated.]

II. According to many, the blessing must be recited before the close of a three-hour period following sunrise. Most authorities maintain that this period is calculated on the basis of *sha'os zemaniyos*, or temporary (and hence variable) hours. One such hour is calculated by dividing the period between sunrise and sunset by twelve. The times given in column II are determined by multiplying the length of a single temporary hour by three and adding that period to the time of sunrise.

III. According to R. Meir David Hertzberg, *Or haChammah*, the three-hour period is calculated in usual clock hours.

IV. Many authorities maintain that the blessing may be recited until midday, i.e., the time at which the sun is directly overhead. This time is determined by dividing the period between sunrise and sunset by one half. [Cf., however; *Iggros Moshe, Orach Chaim*, II, no. 20, for a somewhat different method of calculation.]

Zemanei Bircas haChammah — April 8, 2009

	I. החמה הנץ SUNRISE	II. 1 שעות זמנית 3 TEMPORARY HOURS AFTER SUNRISE	III. 1 שעות שוות 3 CLOCK HOURS AFTER SUNRISE	IV. חצות היום MIDDAY
UNITED STATES				
Albany, NY	6:25	9:41	9:25	12:57
Anchorage, AK	7:28	10:54	10:28	2:21
Ann Arbor, MI	7:05	10:21	10:05	1:37
Atlanta, GA	7:15	10:27	10:15	1:39
Austin, TX	7:12	10:22	10:12	1:33
Baltimore, MD	6:40	9:55	9:40	1:09
Bangor, ME	6:03	9:20	9:03	12:37
Binghamton, NY	6:34	9:50	9:34	1:06
Birmingham, AL	6:26	9:38	9:26	12:50
Boca Raton, FL	7:04	10:13	10:04	1:23
Boston, MA	6:14	9:30	9:14	12:46
Boulder, CO	6:34	9:48	9:34	1:03
Bridgeport, CT	6:24	9:40	9:24	12:55
Brookline, MA	6:15	9:31	9:15	12:47
Brooklyn, NY	6:28	9:43	9:28	12:58
Buffalo, NY	6:45	10:01	9:45	1:17
Chapel Hill, NC	6:52	10:05	9:52	1:18
Charleston, SC	6:59	10:10	9:59	1:22
Charlotte, NC	7:00	10:13	10:00	1:25
Chicago, IL	6:21	9:37	9:21	12:53
Cincinnati, OH	7:11	10:26	10:11	1:40
Cleveland, OH	6:57	10:13	9:57	1:28
Columbus, OH	7:04	10:19	10:04	1:34
Dallas, TX	7:06	10:18	10:06	1:29
Deal, NJ	6:28	9:43	9:28	12:58
Denver, CO	6:33	9:47	9:33	1:02
Des Moines, IA	6:45	10:01	9:45	1:17
Detroit, MI	7:02	10:18	10:02	1:34
Englewood, NJ	6:28	9:43	9:28	12:58
Far Rockaway, NY	6:27	9:42	9:27	12:57
Fort Lauderdale, FL	7:04	10:13	10:04	1:22
Harrisburg, PA	6:39	9:54	9:39	1:09
Honolulu, HI	7:18	10:26	10:18	1:33
Houston, TX	7:03	10:13	10:03	1:24
Indianapolis, IN	7:17	10:32	10:17	1:47
Irvine, CA	6:38	9:55	9:38	1:13
Ithaca, NY	6:36	9:52	9:36	1:08
Jackson, MI	7:08	10:24	10:08	1:40
Jacksonville, FL	7:07	10:18	10:07	1:29
Kansas City, KS	6:52	10:07	9:52	1:21
La Jolla, CA	6:28	9:39	9:28	12:51
Lakewood, NJ	6:29	9:44	9:29	12:59
Lancaster, PA	6:38	9:53	9:38	1:07
Las Vegas, NV	6:16	9:29	9:16	12:43
Louisville, KY	6:16	9:29	9:16	12:43
Los Angeles, CA	6:31	9:43	9:31	12:55
Madison, WI	6:27	9:44	9:27	1:00
Memphis, TN	6:36	9:49	9:36	1:01

Zemanei Bircas haChammah — April 8, 2009

	I. הגז החמה SUNRISE	II. ג שעות זמניות 3 TEMPORARY HOURS AFTER SUNRISE	III. ג שעות שוות 3 CLOCK HOURS AFTER SUNRISE	IV. הצות היום MIDDAY
UNITED STATES				
Miami, FL	7:05	10:14	10:05	1:23
Milwaukee, WI	6:21	9:38	9:21	12:54
Minneapolis, MN	6:41	9:58	9:41	1:16
Monsey, NY	6:28	9:43	9:28	12:58
Monticello, NY	6:30	9:45	9:30	1:01
Nashville, TN	6:23	9:36	9:23	12:49
New Haven, CT	6:23	9:39	9:23	12:54
New York, NY	6:28	9:43	9:28	12:58
Norfolk, VA	6:41	9:54	9:41	1:07
Norman, OK	7:07	10:19	10:07	1:32
Oak Park, MI	7:03	10:19	10:03	1:35
Oakland, CA	6:43	9:57	9:43	1:11
Omaha, NE	6:55	10:11	9:55	1:26
Palm Beach, FL	7:03	10:13	10:03	1:22
Palo Alto, CA	6:43	9:57	9:43	1:11
Passaic, NJ	6:28	9:43	9:28	12:59
Philadelphia, PA	6:33	9:48	9:33	1:03
Phoenix, AZ	6:06	9:18	9:06	12:30
Pittsburg, PA	6:52	10:07	9:52	1:22
Portland, OR	6:37	9:55	9:37	1:13
Postville, IA	6:36	9:52	9:36	1:08
Richmond, VA	6:45	9:59	9:45	1:12
Rochester, MN	6:38	9:55	9:38	1:12
Rochester, NY	6:40	9:56	9:40	1:13
San Antonio, TX	7:15	10:26	10:15	1:36
San Diego, CA	6:27	9:38	9:27	12:50
San Francisco, CA	6:44	9:58	9:44	1:12
San Jose, CA	6:42	9:56	9:42	1:09
Savannah, GA	7:03	10:15	10:03	1:26
Scranton, PA	6:34	9:49	9:34	1:05
Seattle, WA	6:33	9:52	9:33	1:11
Silver Spring, MD	6:42	9:56	9:42	1:10
South Bend, IN	7:16	10:32	10:16	1:47
Springfield, MA	6:21	9:37	9:21	12:52
St Louis, MO	6:35	9:49	9:35	1:03
St Paul, MN	6:39	9:57	9:39	1:14
Sunnyvale, CA	6:43	9:57	9:43	1:10
Syracuse, NY	6:34	9:51	9:34	1:07
Tampa Bay, FL	7:12	10:22	10:12	1:32
Teaneck, NJ	6:28	9:43	9:28	12:58
Toledo, OH	7:05	10:21	10:05	1:36
Tucson, AZ	6:03	9:14	9:03	12:26
Washington, DC	6:42	9:56	9:42	1:10
Waterbury, CT	6:23	9:39	9:23	12:54
West Hartford, CT	6:22	9:37	9:22	12:53
West Palm Beach, FL	7:03	10:13	10:03	1:22
Yardley, PA	6:32	9:46	9:32	1:01

Zemanei Bircas haChammah — April 8, 2009

	I. הנץ החמה SUNRISE	II. 1 שעות זמניות 3 TEMPORARY HOURS AFTER SUNRISE	III. 1 שעות שוות 3 CLOCK HOURS AFTER SUNRISE	IV. חצות היום MIDDAY
FOREIGN COUNTRIES				
Amsterdam, Neth.	6:59	10:21	9:59	1:43
Antwerp, Belgium	7:02	10:24	10:02	1:45
Be'er Sheva, Israel	6:21	9:32	9:21	12:43
Berlin, Germany	6:25	9:47	9:25	1:09
Birmingham, England	6:26	9:48	9:26	1:10
Budapest, Hungary	6:09	9:27	9:09	12:46
Buenos Aires, Arg.	7:13	10:04	10:13	12:56
Calgary, AB	6:56	10:17	9:56	1:39
Cape Town, S.A.	7:04	9:56	10:04	12:48
Caracas, Venezuela	6:21	9:25	9:21	12:30
Curacao Neth., Antilles	6:28	9:33	9:28	12:38
Edmonton, AB	6:50	10:13	9:50	1:36
Eilat, Israel	6:22	9:32	9:22	12:42
Gateshead, UK	6:21	9:45	9:21	1:09
Geneva, Switzerland	7:02	10:20	10:02	1:38
Gibraltar, Spain	6:58	10:11	9:58	1:24
Glasgow, Scotland	6:30	9:54	9:30	1:19
Haifa, Israel	6:19	9:31	9:19	12:42
Halifax, NS	6:42	9:59	9:42	1:17
Hong Kong, China	6:10	9:18	9:10	12:25
Jerusalem, Israel	6:19	9:30	9:19	12:41
Johannesburg, S.A.	6:21	9:15	9:21	12:10
Kiev, Ukraine	6:19	9:40	9:19	1:00
Leningrad, USSR	6:03	9:32	9:03	1:01
Liverpool, UK	6:29	9:52	9:29	1:14
London, UK	6:20	9:41	9:20	1:02
Lugano, Switzerland	6:51	10:09	9:51	1:26
Manchester, UK	6:26	9:48	9:26	1:11
Marseilles, France	7:08	10:24	10:08	1:41
Melbourne, Australia	6:40	9:31	9:40	12:22
Mexico City, Mexico	7:24	10:31	10:24	1:38
Milan, Italy	6:40	9:56	9:40	1:12
Montreal, QC	6:21	9:39	9:21	12:57
Montreux, Switzerland	6:59	10:17	9:59	1:35
Moscow, USSR	6:42	10:07	9:42	1:32
Ottawa, QC	6:30	9:47	9:30	1:05
Paris, France	7:14	10:33	10:14	1:53
Perth, Australia	7:34	10:24	10:34	1:13
Rome, Italy	6:41	9:57	9:41	1:12
Santiago, Chile	7:00	9:52	10:00	12:44
Sao Paulo, Brazil	6:17	9:13	9:17	12:08
Strassbourg, France	6:53	10:12	9:53	1:31
Sydney, Australia	6:12	9:05	9:12	11:57
Tel Aviv, Israel	6:21	9:32	9:21	12:43
Toronto, ON	6:47	10:03	9:47	1:20
Vancouver, BC	6:34	9:55	9:34	1:15
Vienna, Austria	6:19	9:38	9:19	12:57
Vilnius, Lithuania	6:33	9:57	9:33	1:21
Warsaw, Poland	5:55	9:16	8:55	12:38
Winnipeg, MB	6:50	10:10	9:50	1:31
Zurich, Switzerland	6:51	10:10	9:51	1:28

TABLE B

V. Dawn, or the “rise of the morning star” (*alos hashachar*), occurs a certain period of time before sunrise. This period is reckoned as the time required to traverse a distance of 4 *mil*. The conventional practice, which reflects the view of *Terumas haDeshen*, no. 123 and *Shulchan Aruch, Orach Chaim* 459:2, is to reckon the time required to traverse a distance of a *mil* as 18 minutes. Accordingly, the 4-*mil* period between *alos hashachar* and sunrise equals 72 minutes.

VI. Some authorities maintain that the three-hour period described in II must be reckoned by dividing the period between *alos hashachar* and night (*tzeis hakochovim*) into twelve *sha’os zemaniyos* and then adding three such hours to the time of dawn. According to the conventional practice, night is also reckoned as occurring 72 minutes after sunset. [Those who reckon the three-hour period as clock hours beginning with *alos hashachar* would simply add three hours to the times listed in column V.]

VII. Most authorities agree that the period between dawn and sunrise and the period between sunset and night vary with distance from the equator and season of the year. They maintain that the 4-*mil* or 72-minute period refers only to the time between dawn and sunrise (and sunset and night) in *Eretz Yisrael* and Babylonia at the time of the equinox. At those places and on those dates the sun is 16.1° below the horizon 72 minutes before sunrise. Hence, for other dates and other locales dawn (and night) must be calculated as the time at which the sun is 16.1° below the horizon.

VIII. The times in this column are calculated on the basis of *sha’os zemaniyos* as in VI, but reckon dawn and night as described in VII. [Those who reckon the three-hour period as clock hours beginning with *alos hashachar* and calculate *alos hashachar* as in VII would add three hours to the times listed in column VII.]

IX. All authorities agree that *alos hashachar* is calculated on the basis of a 4-*mil* period prior to sunrise. [See R. Tucatzinsky, *Bein haShemoshos*, pp. 7-10.] However, many maintain that night is calculated by adding the time required to traverse $\frac{3}{4}$ of a *mil* to the time of sunset. According to the authorities who maintain that the time required to traverse a *mil* is 18 minutes in duration, $\frac{3}{4}$ of a *mil* equals 13 $\frac{1}{2}$ minutes. This corresponds to the descent of the sun to a position 3.70° below the horizon in *Eretz Yisrael* and Babylonia at the time of the equinox. The times here given are based upon

calculation of dawn as occurring when the sun is 16.1° below the horizon and night when the sun is 3.70° below the horizon. The intervening period is divided by twelve to determine a single *sha'ah zemanis*. [Cf., however, R. Tucatzinsky, *Bein haShemoshos*, p.98.]

X. The times in this column are calculated in the same manner as in column VII but are based upon reckoning the time required to traverse a single *mil* as being equal to $22 \frac{1}{2}$ minutes in accordance with the view of *Biur haGra*, *Orach Chaim* 459:10. [See also *Mishnah Berurah* 459:2.] According to this view, *alos hashachar* occurs 90 minutes before sunrise in *Eretz Yisrael* and Babylonia on the day of the equinox at which time the sun is 19.8° below the horizon.

XI. The times in this column are calculated in the same manner as in column IX but are based upon reckoning the time required to traverse a distance of a single *mil* as being equal to $22 \frac{1}{2}$ minutes and the time required to traverse a distance of 4 *mil* as being equal to 90 minutes as in column X. Accordingly, the $\frac{3}{4}$ -*mil* period between sunset and night is equal to 16.875 minutes at which time the sun is 4.42° below the horizon in *Eretz Yisrael* and Babylonia on the day of the equinox.

XII. The times in this column are calculated in the same manner as in columns VII and X but are based upon reckoning the time required to traverse a single *mil* as being equal to 24 minutes in accordance with the view of *Rambam* and R. Ovadia of Bartenura in their respective commentaries on the *Mishnah*, *Pesachim* 3:2. According to this view, *alos hashachar* occurs 96 minutes before sunrise in *Eretz Yisrael* and Babylonia on the day of the equinox at which time the sun is 21° below the horizon.

XIII. The times in this column are calculated in the same manner as in columns IX and XI but are based upon reckoning the time required to traverse a distance of a single *mil* as being equal to 24 minutes and the time required to traverse a distance of 4 *mil* as being equal to 96 minutes as in column XII. Accordingly, the $\frac{3}{4}$ -*mil* period between sunset and night is equal to 18 minutes at which time the sun is 4.61° below the horizon in *Eretz Yisrael* and Babylonia on the day of the equinox. [Dr. Leo Levi, *Halakhic Times*, 3rd edition (Jerusalem, 2000), p. 311, states that according to this view the calculation of *tzeis hakochovim* should be made on the basis of the time at which the sun reaches 4.81° below the horizon. That calculation is based upon a minor variation in postulating the length of a *mil*.]

Alternate Zemani Bircas haChammah According to Some Authorities

	V. עלות השחר הערות 72 MINUTES BEFORE SUNRISE	VI. ג שעות זמניות 3 TEMPORARY HOURS AFTER DAWN	VII. עלות השחר 16.1 DAWN 16.1	VIII. ג שעות זמניות 3 TEMPORARY HOURS AFTER 16.1	IX. ג שעות זמניות 3 TEMPORARY HOURS DAWN 16.1 NIGHT 3.70
UNITED STATES					
Albany, NY	5:13	9:05	4:57	8:57	8:39
Anchorage, AK	6:16	10:18	5:21	9:51	9:24
Ann Arbor, MI	5:53	9:45	5:38	9:38	9:20
Atlanta, GA	6:03	9:51	5:59	9:49	9:34
Austin, TX	6:00	9:46	5:59	9:46	9:31
Baltimore, MD	5:28	9:19	5:17	9:13	8:56
Bangor, ME	4:51	8:44	4:31	8:34	8:16
Binghamton, NY	5:22	9:14	5:07	9:07	8:49
Birmingham, AL	5:14	9:02	5:10	9:00	8:44
Boca Raton, FL	5:52	9:37	5:54	9:38	9:24
Boston, MA	5:02	8:54	4:47	8:47	8:29
Boulder, CO	5:22	9:12	5:10	9:07	8:49
Bridgeport, CT	5:12	9:04	4:59	8:57	8:40
Brookline, MA	5:03	8:55	4:48	8:47	8:29
Brooklyn, NY	5:16	9:07	5:03	9:01	8:44
Buffalo, NY	5:33	9:25	5:17	9:17	8:59
Chapel Hill, NC	5:40	9:29	5:34	9:26	9:10
Charleston, SC	5:47	9:34	5:44	9:33	9:18
Charlotte, NC	5:48	9:37	5:43	9:34	9:18
Chicago, IL	5:09	9:01	4:55	8:54	8:36
Cincinnati, OH	5:59	9:50	5:49	9:44	9:27
Cleveland, OH	5:45	9:37	5:31	9:30	9:12
Columbus, OH	5:52	9:43	5:41	9:37	9:20
Dallas, TX	5:54	9:42	5:51	9:40	9:25
Deal, NJ	5:16	9:07	5:04	9:01	8:44
Denver, CO	5:21	9:11	5:10	9:06	8:49
Des Moines, IA	5:33	9:25	5:19	9:18	9:00
Detroit, MI	5:50	9:42	5:35	9:35	9:17
Englewood, NJ	5:16	9:07	5:03	9:00	8:43
Far Rockaway, NY	5:15	9:06	5:03	9:00	8:43
Fort Lauderdale, FL	5:52	9:37	5:54	9:38	9:24
Harrisburg, PA	5:27	9:18	5:15	9:12	8:55
Honolulu, HI	6:06	9:50	6:11	9:52	9:39
Houston, TX	5:51	9:37	5:50	9:37	9:22
Indianapolis, IN	6:05	9:56	5:54	9:50	9:33
Irvine, CA	5:26	9:19	5:04	9:09	8:50
Ithaca, NY	5:24	9:16	5:09	9:09	8:51
Jackson, MI	5:56	9:48	5:41	9:40	9:23
Jacksonville, FL	5:55	9:42	5:55	9:42	9:27
Kansas City, KS	5:40	9:31	5:30	9:26	9:09
La Jolla, CA	5:16	9:03	5:13	9:02	8:46
Lakewood, NJ	5:17	9:08	5:06	9:02	8:45
Lancaster, PA	5:26	9:17	5:14	9:11	8:54
Las Vegas, NV	5:04	8:53	4:58	8:50	8:34
Louisville, KY	5:04	8:53	4:58	8:50	8:34
Los Angeles, CA	5:19	9:07	5:15	9:05	8:49
Madison, WI	5:15	9:08	4:59	9:00	8:41
Memphis, TN	5:24	9:13	5:19	9:10	8:54

Alternate Zemani Bircas haChammah According to Some Authorities

	V. עלות השחר DAWN 72 MINUTES BEFORE SUNRISE	VI. ג שעות זמנית 3 TEMPORARY HOURS AFTER DAWN	VII. עלות השחר DAWN 16.1	VIII. ג שעות זמנית 3 TEMPORARY HOURS AFTER 16.1	IX. ג שעות זמנית 3 TEMPORARY HOURS DAWN 16.1 NIGHT 3-70
UNITED STATES					
Miami, FL	5:53	9:38	5:56	9:39	9:25
Milwaukee, WI	5:09	9:02	4:53	8:54	8:35
Minneapolis, MN	5:29	9:22	5:09	9:12	8:53
Monsey, NY	5:16	9:07	5:03	9:01	8:43
Monticello, NY	5:18	9:09	5:04	9:02	8:45
Nashville, TN	5:11	9:00	5:04	8:57	8:41
New Haven, CT	5:11	9:03	4:58	8:56	8:38
New York, NY	5:16	9:07	5:03	9:01	8:43
Norfolk, VA	5:29	9:18	5:21	9:14	8:58
Norman, OK	5:55	9:43	5:49	9:41	9:25
Oak Park, MI	5:51	9:43	5:35	9:35	9:17
Oakland, CA	5:31	9:21	5:23	9:17	9:00
Omaha, NE	5:43	9:35	5:30	9:28	9:11
Palm Beach, FL	5:51	9:37	5:53	9:38	9:23
Palo Alto, CA	5:31	9:21	5:23	9:17	9:00
Passaic, NJ	5:16	9:07	5:03	9:01	8:44
Philadelphia, PA	5:21	9:12	5:10	9:06	8:49
Phoenix, AZ	4:54	8:42	4:50	8:40	8:25
Pittsburg, PA	5:40	9:31	5:28	9:25	9:08
Portland, OR	5:25	9:19	5:04	9:09	8:50
Postville, IA	5:24	9:16	5:07	9:08	8:50
Richmond, VA	5:33	9:23	5:25	9:19	9:02
Rochester, MN	5:26	9:19	5:08	9:10	8:52
Rochester, NY	5:28	9:20	5:11	9:12	8:54
San Antonio, TX	6:03	9:50	6:03	9:50	9:35
San Diego, CA	5:15	9:02	5:12	9:01	8:46
San Francisco, CA	5:32	9:22	5:23	9:18	9:01
San Jose, CA	5:30	9:20	5:22	9:16	8:59
Savannah, GA	5:51	9:39	5:49	9:38	9:22
Scranton, PA	5:22	9:13	5:08	9:06	8:49
Seattle, WA	5:21	9:16	4:56	9:04	8:44
Silver Spring, MD	5:30	9:20	5:19	9:15	8:58
South Bend, IN	6:04	9:56	5:50	9:49	9:31
Springfield, MA	5:09	9:01	4:54	8:53	8:36
St Louis, MO	5:23	9:13	5:13	9:08	8:52
St Paul, MN	5:27	9:21	5:07	9:11	8:52
Sunnyvale, CA	5:31	9:21	5:23	9:17	9:00
Syracuse, NY	5:22	9:15	5:06	9:06	8:48
Tampa Bay, FL	6:00	9:46	6:01	9:46	9:32
Teaneck, NJ	5:16	9:07	5:03	9:01	8:43
Toledo, OH	5:53	9:45	5:39	9:38	9:20
Tucson, AZ	4:51	8:38	4:48	8:37	8:22
Washington, DC	5:30	9:20	5:20	9:15	8:58
Waterbury, CT	5:11	9:03	4:57	8:56	8:38
West Hartford, CT	5:10	9:01	4:56	8:54	8:37
West Palm Beach, FL	5:51	9:37	5:53	9:38	9:24
Yardley, PA	5:20	9:10	5:08	9:04	8:47

Alternate *Zemanei Bircas haChammah* According to Some Authorities

	X. עלות השחר DAWN 19.8	XI. 1 שעות זמניות 3 TEMPORARY HOURS DAWN 19.8 NIGHT 4.42	XII. עלות השחר DAWN 21	XIII. 1 שעות זמניות 3 TEMPORARY HOURS DAWN 21 NIGHT 4.61
UNITED STATES				
Albany, NY	4:34	8:23	4:27	8:18
Anchorage, AK	4:41	8:56	4:26	8:45
Ann Arbor, MI	5:16	9:04	5:08	8:58
Atlanta, GA	5:40	9:20	5:34	9:16
Austin, TX	5:40	9:18	5:34	9:14
Baltimore, MD	4:56	8:41	4:49	8:36
Bangor, ME	4:07	7:58	3:59	7:53
Binghamton, NY	4:45	8:33	4:37	8:27
Birmingham, AL	4:51	8:31	4:45	8:27
Boca Raton, FL	5:37	9:12	5:31	9:08
Boston, MA	4:24	8:13	4:17	8:07
Boulder, CO	4:48	8:34	4:41	8:29
Bridgeport, CT	4:37	8:24	4:29	8:19
Brookline, MA	4:25	8:13	4:18	8:08
Brooklyn, NY	4:42	8:28	4:34	8:23
Buffalo, NY	4:54	8:43	4:46	8:38
Chapel Hill, NC	5:14	8:56	5:08	8:51
Charleston, SC	5:25	9:04	5:18	9:00
Charlotte, NC	5:23	9:04	5:16	9:00
Chicago, IL	4:32	8:20	4:25	8:15
Cincinnati, OH	5:27	9:12	5:20	9:07
Cleveland, OH	5:09	8:57	5:02	8:51
Columbus, OH	5:19	9:05	5:12	9:00
Dallas, TX	5:32	9:11	5:25	9:07
Deal, NJ	4:43	8:29	4:36	8:24
Denver, CO	4:48	8:34	4:41	8:29
Des Moines, IA	4:57	8:45	4:50	8:39
Detroit, MI	5:12	9:01	5:05	8:55
Englewood, NJ	4:41	8:27	4:33	8:22
Far Rockaway, NY	4:41	8:27	4:33	8:22
Fort Lauderdale, FL	5:37	9:12	5:31	9:08
Harrisburg, PA	4:54	8:40	4:46	8:35
Honolulu, HI	5:55	9:27	5:49	9:23
Houston, TX	5:32	9:10	5:26	9:05
Indianapolis, IN	5:32	9:18	5:25	9:13
Irvine, CA	4:40	8:32	4:31	8:26
Ithaca, NY	4:46	8:35	4:38	8:29
Jackson, MI	5:18	9:07	5:11	9:01
Jacksonville, FL	5:36	9:14	5:30	9:10
Kansas City, KS	5:09	8:54	5:02	8:49
La Jolla, CA	4:54	8:33	4:47	8:29
Lakewood, NJ	4:44	8:30	4:37	8:25
Lancaster, PA	4:53	8:39	4:45	8:33
Las Vegas, NV	4:38	8:20	4:31	8:15
Louisville, KY	4:38	8:20	4:31	8:15
Los Angeles, CA	4:55	8:36	4:49	8:31
Madison, WI	4:36	8:25	4:28	8:20
Memphis, TN	4:59	8:40	4:53	8:36

Alternate *Zemani Bircas haChammah* According to Some Authorities

	X. עלות השחר DAWN 19:8	XI. ג שעות זמנית 3 TEMPORARY HOURS DAWN 19:8 NIGHT 4:42	XII. עלות השחר DAWN 21	XIII. ג שעות זמנית 3 TEMPORARY HOURS DAWN 21 NIGHT 4:61
UNITED STATES				
Miami, FL	5:38	9:13	5:33	9:09
Milwaukee, WI	4:30	8:19	4:22	8:13
Minneapolis, MN	4:45	8:36	4:36	8:30
Monsey, NY	4:40	8:27	4:33	8:22
Monticello, NY	4:41	8:29	4:34	8:24
Nashville, TN	4:44	8:27	4:38	8:22
New Haven, CT	4:35	8:23	4:28	8:17
New York, NY	4:41	8:28	4:34	8:23
Norfolk, VA	5:01	8:44	4:54	8:39
Norman, OK	5:29	9:11	5:23	9:06
Oak Park, MI	5:13	9:01	5:05	8:56
Oakland, CA	5:02	8:46	4:55	8:41
Omaha, NE	5:08	8:55	5:01	8:50
Palm Beach, FL	5:36	9:11	5:30	9:07
Palo Alto, CA	5:03	8:46	4:56	8:41
Passaic, NJ	4:41	8:28	4:34	8:23
Philadelphia, PA	4:48	8:34	4:41	8:29
Phoenix, AZ	4:31	8:11	4:25	8:07
Pittsburg, PA	5:06	8:52	4:59	8:47
Portland, OR	4:40	8:32	4:31	8:26
Postville, IA	4:44	8:33	4:36	8:28
Richmond, VA	5:04	8:48	4:57	8:43
Rochester, MN	4:44	8:35	4:36	8:29
Rochester, NY	4:48	8:37	4:40	8:32
San Antonio, TX	5:45	9:22	5:40	9:18
San Diego, CA	4:53	8:32	4:46	8:28
San Francisco, CA	5:03	8:46	4:56	8:42
San Jose, CA	5:02	8:45	4:55	8:40
Savannah, GA	5:30	9:09	5:24	9:05
Scranton, PA	4:46	8:33	4:38	8:28
Seattle, WA	4:30	8:25	4:21	8:19
Silver Spring, MD	4:58	8:43	4:51	8:38
South Bend, IN	5:28	9:15	5:20	9:10
Springfield, MA	4:31	8:20	4:24	8:14
St Louis, MO	4:52	8:37	4:45	8:32
St Paul, MN	4:43	8:34	4:34	8:29
Sunnyvale, CA	5:02	8:46	4:56	8:41
Syracuse, NY	4:43	8:32	4:35	8:26
Tampa Bay, FL	5:43	9:20	5:38	9:15
Teaneck, NJ	4:41	8:28	4:34	8:22
Toledo, OH	5:17	9:04	5:09	8:59
Tucson, AZ	4:29	8:09	4:23	8:04
Washington, DC	4:59	8:43	4:52	8:38
Waterbury, CT	4:35	8:22	4:27	8:17
West Hartford, CT	4:33	8:21	4:26	8:15
West Palm Beach, FL	5:36	9:11	5:30	9:07
Yardley, PA	4:46	8:32	4:39	8:27

Alternate Zemani Bircas haChammah According to Some Authorities

	V. השחר עלות 72 MINUTES BEFORE SUNRISE	VI. זמנית ג שעות 3 TEMPORARY HOURS AFTER DAWN	VII. השחר עלות 16.1	VIII. זמנית ג שעות 3 TEMPORARY HOURS AFTER 16.1	IX. זמנית ג שעות 3 TEMPORARY HOURS DAWN 16.1 NIGHT 3.70
FOREIGN COUNTRIES					
Amsterdam, Neth.	5:47	9:45	5:09	9:26	9:03
Antwerp, Belgium	5:50	9:48	5:16	9:30	9:08
Be'er Sheva, Israel	5:09	8:56	5:08	8:55	8:40
Berlin, Germany	5:13	9:11	4:34	8:51	8:28
Birmingham, England	5:14	9:12	4:35	8:53	8:30
Budapest, Hungary	4:57	8:51	4:32	8:39	8:19
Buenos Aires, Arg.	6:01	9:28	5:58	9:27	9:12
Calgary, AB	5:44	9:41	5:09	9:24	9:02
Cape Town, S.A.	5:52	9:20	5:50	9:19	9:04
Caracas, Venezuela	5:09	8:49	5:18	8:54	8:41
Curacao Neth., Antilles	5:16	8:57	5:25	9:01	8:48
Edmonton, AB	5:38	9:37	4:55	9:16	8:52
Eilat, Israel	5:10	8:56	5:10	8:56	8:41
Gateshead, UK	5:09	9:09	4:21	8:45	8:20
Geneva, Switzerland	5:50	9:44	5:28	9:33	9:13
Gibraltar, Spain	5:46	9:35	5:39	9:31	9:15
Glasgow, Scotland	5:18	9:18	4:26	8:53	8:27
Haifa, Israel	5:07	8:55	5:04	8:53	8:38
Halifax, NS	5:30	9:23	5:11	9:14	8:55
Hong Kong, China	4:58	8:42	5:03	8:44	8:30
Jerusalem, Israel	5:07	8:54	5:05	8:53	8:38
Johannesburg, S.A.	5:09	8:39	5:12	8:41	8:27
Kiev, Ukraine	5:07	9:04	4:35	8:48	8:26
Leningrad, USSR	4:51	8:56	3:37	8:20	7:49
Liverpool, UK	5:17	9:16	4:35	8:55	8:31
London, UK	5:08	9:05	4:32	8:47	8:25
Lugano, Switzerland	5:39	9:33	5:17	9:22	9:03
Manchester, UK	5:14	9:12	4:31	8:52	8:28
Marseilles, France	5:56	9:48	5:39	9:40	9:22
Melbourne, Australia	5:28	8:55	5:22	8:52	8:36
Mexico City, Mexico	6:12	9:55	6:18	9:58	9:45
Milan, Italy	5:28	9:20	5:12	9:12	8:54
Montreal, QC	5:09	9:03	4:48	8:53	8:34
Montreux, Switzerland	5:47	9:41	5:24	9:29	9:10
Moscow, USSR	5:30	9:31	4:39	9:06	8:40
Ottawa, QC	5:18	9:11	4:57	9:01	8:42
Paris, France	6:02	9:57	5:34	9:43	9:23
Perth, Australia	6:22	9:48	6:12	9:43	9:26
Rome, Italy	5:29	9:21	5:15	9:14	8:56
Santiago, Chile	5:48	9:16	5:47	9:15	9:00
Sao Paulo, Brazil	5:05	8:37	5:11	8:39	8:26
Strasbourg, France	5:41	9:36	5:13	9:22	9:02
Sydney, Australia	5:00	8:29	4:59	8:28	8:13
Tel Aviv, Israel	5:09	8:56	5:06	8:55	8:40
Toronto, ON	5:35	9:27	5:17	9:18	9:00
Vancouver, BC	5:22	9:19	4:53	9:04	8:43
Vienna, Austria	5:07	9:02	4:40	8:49	8:28
Vilnius, Lithuania	5:21	9:21	4:35	8:58	8:34
Warsaw, Poland	4:43	8:40	4:05	8:22	7:59
Winnipeg, MB	5:38	9:34	5:07	9:19	8:58
Zurich, Switzerland	5:39	9:34	5:14	9:21	9:01

Alternate *Zemani Bircas haChammah* According to Some Authorities

	X. עלות השחר DAWN 19.8	XI. ג שעות זמניות 3 TEMPORARY HOURS DAWN 19.8 NIGHT 4.42	XII. עלות השחר DAWN 21	XIII. ג שעות זמניות 3 TEMPORARY HOURS DAWN 21 NIGHT 4.61
FOREIGN COUNTRIES				
Amsterdam, Neth.	4:37	8:41	4:26	8:33
Antwerp, Belgium	4:46	8:47	4:35	8:40
Be'er Sheva, Israel	4:49	8:27	4:43	8:23
Berlin, Germany	4:02	8:06	3:51	7:58
Birmingham, England	4:04	8:07	3:53	7:59
Budapest, Hungary	4:06	8:00	3:57	7:54
Buenos Aires, Arg.	5:40	9:00	5:34	8:55
Calgary, AB	4:39	8:41	4:29	8:33
Cape Town, S.A.	5:32	8:52	5:26	8:48
Caracas, Venezuela	5:02	8:30	4:57	8:27
Curacao Neth., Antilles	5:09	8:38	5:04	8:34
Edmonton, AB	4:22	8:28	4:10	8:20
Eilat, Israel	4:51	8:29	4:46	8:24
Gateshead, UK	3:45	7:55	3:32	7:45
Geneva, Switzerland	5:02	8:56	4:54	8:49
Gibraltar, Spain	5:19	9:01	5:13	8:57
Glasgow, Scotland	3:48	8:00	3:35	7:50
Haifa, Israel	4:45	8:24	4:39	8:20
Halifax, NS	4:47	8:38	4:39	8:32
Hong Kong, China	4:46	8:19	4:41	8:15
Jerusalem, Israel	4:46	8:25	4:40	8:21
Johannesburg, S.A.	4:56	8:15	4:50	8:12
Kiev, Ukraine	4:06	8:06	3:56	7:58
Leningrad, USSR	2:45	7:11	2:22	6:54
Liverpool, UK	4:02	8:08	3:50	7:59
London, UK	4:01	8:03	3:51	7:56
Lugano, Switzerland	4:52	8:45	4:44	8:39
Manchester, UK	3:58	8:04	3:46	7:56
Marseilles, France	5:16	9:06	5:08	9:00
Melbourne, Australia	5:04	8:23	4:57	8:19
Mexico City, Mexico	6:02	9:34	5:57	9:30
Milan, Italy	4:49	8:38	4:41	8:32
Montreal, QC	4:24	8:16	4:15	8:10
Montreux, Switzerland	4:58	8:52	4:50	8:46
Moscow, USSR	4:02	8:13	3:48	8:04
Ottawa, QC	4:32	8:25	4:24	8:19
Paris, France	5:06	9:03	4:57	8:57
Perth, Australia	5:52	9:12	5:46	9:07
Rome, Italy	4:52	8:40	4:45	8:35
Santiago, Chile	5:29	8:48	5:23	8:44
Sao Paulo, Brazil	4:54	8:14	4:49	8:11
Strassbourg, France	4:46	8:42	4:37	8:36
Sydney, Australia	4:41	8:00	4:35	7:56
Tel Aviv, Israel	4:48	8:26	4:41	8:22
Toronto, ON	4:53	8:43	4:46	8:38
Vancouver, BC	4:25	8:23	4:15	8:16
Vienna, Austria	4:13	8:09	4:04	8:03
Vilnius, Lithuania	4:00	8:09	3:47	7:59
Warsaw, Poland	3:33	7:37	3:23	7:29
Winnipeg, MB	4:38	8:37	4:29	8:30
Zurich, Switzerland	4:48	8:43	4:39	8:36