

The Jewish Calendar
October 29, 2004
by Maggie Parkhurst

The Jewish Calendar

Each year when I get my new Jewish calendar, the first thing I check is when the holidays are. This year I was amazed to find that in 2005, Passover starts on April 23 and Rosh Hashanah isn't until October 4. Wow - so late! But why are the holidays so late this year? And while we're asking questions, why do the Jewish holidays have to move around so much? Why is Hanukkah sometimes during Thanksgiving and sometimes, like next year, still going on after Xmas?

Well, sit back and relax. Tonight I'm going to give you the answer. And it's obviously not a short one, or I wouldn't be devoting an entire drash to it. In fact, the Jewish calendar is calculated in such an arcane way that its rules were known only to a small council of rabbis of the Sanhedrin, the Sod ha-lbur, which means "secret of the calendar." This group wielded such power that when a rabbi in Babylon tried to calculate the calendar using the superior knowledge of Babylonian astronomers, the Sanhedrin excommunicated him. But in the fourth century, persecution of the Jews under the Roman Emperor Constantine made it so difficult for the priests in Israel to communicate the calendar to the Diaspora, that they were forced to make the rules public.

Before I give you these rules, and there are three of them, you need to know what a calendar is. According to Webster's unabridged dictionary, a calendar is defined as both a system of determining the beginning, length and divisions of a year and a series of tables giving the days, weeks and months of the year. Days, weeks, months and years – three of these measures of time are astronomical, that is, they are based on the motions of heavenly bodies (and I'm not talking about Brad Pitt). Probably the most ancient one is the day, the amount of time it takes for the earth to rotate on its axis. Most people measured a day from sunrise to sunrise, except for – guess who? (pause) - the Jews, who used from sunset to sunset. Today we compromise and start a new day at midnight, but the practical effect is still that all our waking time is on the same day. The next most ancient measure of time is the month, the time it takes for the moon to complete the cycle of its phases, which is roughly 30 days. Eventually some discerning folks noticed that there were seasons during which the days lengthened or shortened, when it was hotter or colder, and they figured out

that the time it took for the same season to return was about 12 months, and this was designated a year.

We also have the fourth way to measure time on our calendars today, one that has nothing to do with astronomy, one that we Jews can proudly take credit for. And that is the 7-day week, one which begins on Sunday and ends on Saturday, our Sabbath. Now that I've explained the building blocks of the calendar, there's still one more thing you need to know before you can understand the Jewish calendar, and that is the difference between a lunar and a solar calendar.

In a lunar calendar, like the one Muslims use, a month begins with the new moon, so that phase of the moon is always the same on the same day of the month. But 12 lunar months only add up to 354 days, which means that the Muslim holidays progress 11 days earlier each year and thus are not tied to any particular season. In a solar calendar, like our civil one, months are set up in such a way that the spring equinox will always fall on March 21. Thus Thanksgiving is always celebrated in late autumn and Julyfourth in summer.

Now back to the three rules that govern the Jewish calendar, which is both lunar and solar, by the way, which is why it's so complicated. The first rule, the lunar one, states that a Jewish month must begin with the new moon. But since the lunar cycle is actually 29.5 days long, the Jewish calendar alternates months of 29 and 30 days, which makes things come out even.

The second rule is that Passover has to occur in the spring. And not just anytime in the spring – the first Seder must take place on the night of the full moon following the vernal equinox, which definitely complicates things. But the ancient Israelites knew how to do this. While the temple still stood the priests decreed that: "If the sun in the month following Adar will not reach the vernal equinox by the 16th day, then that month is to be called Adar Sheni, the second Adar." In other words, sometimes we need to add an extra month to ensure that the equinox occurs on or before Passover.

These days we don't need a priest to tell us when to add a second Adar. Ever since Hillel II publicized it in 350 CE, Jews have known that our calendar is based on a 19-year cycle in which 7 of these years have two Adars. This explains why in some years the holidays are early – these are the ones when we have just one Adar. And years when the holidays are especially late, like this one, come when we have two Adars and the full moon of Adar Sheni (which is when we celebrate Purim) occurs just before the vernal equinox. And indeed, a quick check of the perpetual Jewish calendar on my computer showed that the last time Rosh Hashanah was

so late was in 1986, when it was on Oct 4 and then again, 19 years earlier in 1967, when it was on Oct 5.

You'd think that this would be enough to calculate already, but there's still one more rule the Jewish calendar has to follow. In case you have a short memory, in each of the last 3 years, BCC's ritual committee has wrestled with whether or not to blow the shofar when Rosh Hashanah or Yom Kippur coincides with Shabbat. You'd think that because Shabbat is only one day out of seven, it wouldn't happen all that often. But that's where the 3rd rule comes in.

This rule states that neither Rosh Hashanah nor Yom Kippur may fall on Friday or Sunday. Amazingly, it would seem that the Sod ha-Ibur considered the poor Jewish woman and how difficult it would be for her to prepare for Shabbat if the day before was a Yom Tov, or vice versa. But actually, that's just an excuse. You see, if we calculate the length of an average Jewish year using the 19-year cycle, we come up with 365 days exactly, which is too short compared to the 365 and 1/4 days given by modern astronomers. Our secular calendar had the same problem, that is it had this problem until they decided to add an extra day in February every 4 years for a leap year.

Now back to the Jewish calendar. We can't just add an extra day to the same month every 4 years, that would throw off the lunar cycle. Instead, the Sod ha-Ibur decided to prevent Rosh Hashanah and Yom Kippur from falling on Friday or Sunday by sometimes adding an extra day to Heshvan, making it 30 days long instead of 29, and less often, by shortening Kislev from 30 days to 29. This year, 5765, is one of those "short" years, and indeed, if had been a "regular" year, next Yom Kippur would be on Friday instead of Thursday. As it turns out, "regular" years aren't very regular at all, since they only occur about once every 4 years. "Long" years, with 30-day Heshvans, are the most frequent, with about twice as many of them as the "short" ones with 29-day Kislevs.

Now you probably know more about the Jewish calendar than you ever thought you would or wanted to. For those of you who aren't asleep yet, here's an interesting piece of calendar trivia that will enable you to figure out what day of the week any Jewish holiday will fall on, once you know which day Passover starts on. First imagine the Hebrew numbers 1 to 6, which are the same as the first 6 letters of the alphabet, aleph through vav. Then think of the last six Hebrew letters in reverse order and match them up with the first six. Our first pair is aleph – tav, from which we learn that Tisha b'Av (starts with a tav) comes on the same day of the week as the

first (aleph) day of Passover, which this year is Sunday. Next is bet-shin, so Shavuot will be on Monday. Moving backwards up the alphabet, we come to resh and find that Rosh Hashanah will be on Tuesday. Kof stands for “kriat Torah,” which we will do on Simchat Torah on the 4th day or Wednesday. Hay goes with Tzadi, for Yom Tzom Kippur, so next year we will be fasting on a Thursday. And the 6th day of Passover, Friday, will be the same day of the week as we celebrate Purim, our holiday that starts with Pei.

So now you have it. Everything you always wanted to know about the Jewish calendar and were afraid to ask. Now you know why the holidays are early sometimes and late other times, why the High Holy Days fall on Shabbat so often, why there’s always a full moon at Purim and Pesach. And by the way, there’s a full moon out tonight, which means that today must be the 15th of the month. And indeed, the Jewish calendar shows that tonight is the 15th of Heshvan.