Oh, How Lovely Was the Morning: Sun 26 Mar 1820?

Author(s): John C. Lefgren and John P. Pratt

Originally Published by: Meridian Magazine, (9 October 2002)

Abstract: No abstract available.

Oh, How Lovely Was the Morning: Sun 26 Mar 1820?

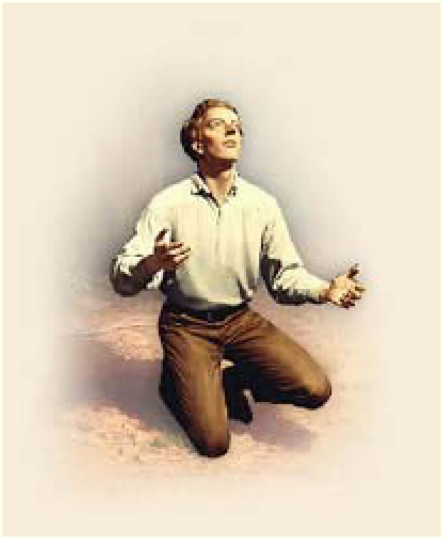
by John C. Lefgren and John P. Pratt

Reprinted from *Meridian Magazine* (9 Oct 2002)

Index, Home

Two researchers working independently have come up with evidence pointing toward a date for the First Vision. Detailed weather reports coupled with maple sugar production cycles point to the compelling possibility.

[Editor's Note: John P. Pratt, who recently proposed the Sun 26 Mar 1820 date for the First Vision based on evidence from the Enoch calendar, was not aware of these results for either the March weather of 1820, nor that maple sugar production might be a factor in determining the date. In fact, Pratt's article had already been reprinted as part of his new book *Divine Calendars* before he received any word of this corroborating evidence from John C. Lefgren. The research being reported in this article was done entirely by John C. Lefgren; Pratt's only contribution was to aid him in writing up the results.]



What was the date of the First Vision?

What is the most important date in Church history? There have been days on which some very important visitors have come. John the Baptist, as well as Peter, James and John all came to restore the priesthood. The Savior, Moses, Elias and Elijah all came on the same Easter Sunday in 1836 to restore important priesthood keys, and that day has been shown to have important calendrical significance.[1] But there was one day on which Heavenly Father himself appeared to man in the latter-days. Has there been a more important day in LDS Church history than the day of the First Vision?

In the October 1998 General Conference President Gordon B. Hinckley stated:

> Our entire case as members of The Church of Jesus Christ of Latter-day Saints rests on the validity of this glorious First Vision. It was the parting of the curtain to open this, the dispensation of the fulness of times. Nothing on which we base our doctrine, nothing we teach, nothing we live by is of greater importance than this initial declaration. I submit that if Joseph Smith talked with God the Father and His Beloved Son, then all else of which he spoke is true. This is the hinge on which turns the gate that leads to the path of salvation and eternal life.[2]

The First Vision is fundamental to our religion, but what was the date on which it occurred? All that we have known about the date is that it "was on the morning of a beautiful, clear day, early in the spring" of 1820 (JSH 1:14). It has been assumed that this brief description could only be used to narrow down the date to have been within the period of late March to early April, with a Sunday being the most likely day on which a farm boy would have been able to actually go to the woods to pray.[3]

Two months ago *Meridian Magazine* published an article by Dr.

The First Vision

John P. Pratt which stated that evidence from the Enoch calendar implied that by far the most likely date for the First Vision was Sunday, March 26, 1820.[4] When I (John C. Lefgren) learned of his proposed date, my interest in this problem was immediately rekindled. Two decades ago, about the time my book *April Sixth*[5] was published, it occurred to me that the First Vision might have happened on April 6, 1820. Knowing that the vision had been on a beautiful day, I sought weather records to verify whether that date was at least a candidate. To my delight I found that detailed weather records had been kept only eighty miles from Palmyra, but to my disappointment I found it had snowed the night before April 6, and had been cloudy and freezing weather all that day. I did not pursue the study further. Thus, when I recently learned of Pratt's proposed date in March, I immediately sent to the National Archives for the microfilms of the weather journal, which resulted in the results published here.

Let us now attempt to identify the precise day of the Prophet Joseph Smith's First Vision. My approach is divided into two parts. First, let us make a selection of all plausible days in early spring which are identified from original 1820 weather records. Second, from the set of possible days, let us consider maple sugar production, which leads to identifying Sunday, March 26, 1820, as by far the most likely day for the First Vision to have occurred.

Early Spring Weather, 1820

According to Joseph Smith's account, there are five conditions which relate to the time of the First Vision: (1) "On the morning of", (2) "a beautiful", (3) "clear day", (4) "early in the spring" (5) "of eighteen hundred and twenty" (JSH 1:14). Using these conditions, I offer the following criteria for selecting a set of possible days from an 1820 weather diary which would satisfy his statement. Here are the selection criteria:

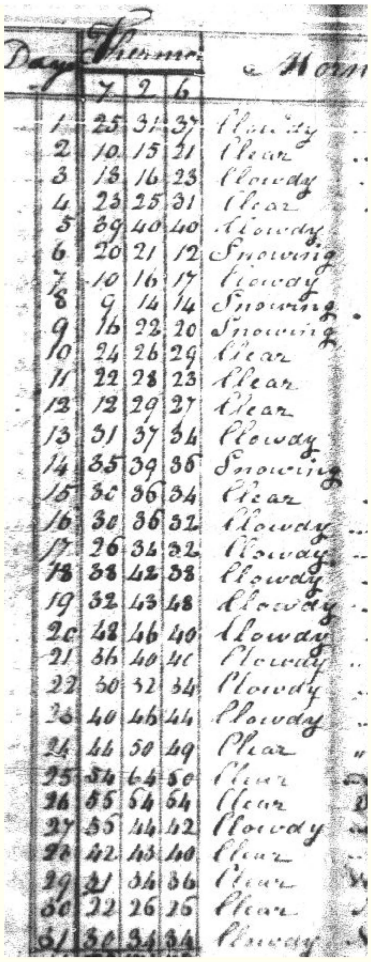
1. "Morning" is a time after sunrise and before midday. This means that I will examine weather conditions which are reported for the morning.

2. "Beautiful" is an indication of a moderate temperature and no strong wind. I propose to look for mornings when the temperature is higher than 40° Fahrenheit with no strong wind.

3. "Clear" relates to the sky. In the mornings of the possible days there are no clouds, no snow, no sleet, and no rain.

4. "Spring" in North America is March, April, and May. For my examination, I propose that "in early spring" means a time which is after March 1st and before April 15th.

5. "Of eighteen hundred and twenty" means a day in the year 1820.



Day	7	2	6	
1	25	34	37	Cloudy
2	10	15	21	Clear
3	18	16	23	Cloudy
4	23	25	31	Clear
5	39	40	40	Cloudy
6	20	21	12	Snowing
7	10	16	17	Cloudy
8	9	14	14	Snowing
9	16	22	20	Snowing
10	24	26	29	Clear
11	22	28	23	Clear
12	12	29	27	Clear
13	31	37	34	Cloudy
14	35	39	36	Snowing
15	30	36	34	Clear
16	30	36	32	Cloudy
17	26	34	32	Cloudy
18	38	42	38	Cloudy
19	32	43	48	Cloudy
20	48	46	40	Cloudy
21	36	40	40	Cloudy
22	30	32	34	Cloudy
23	40	46	44	Cloudy
24	46	50	49	Clear
25	54	64	50	Clear
26	65	64	64	Clear
27	55	44	42	Cloudy
28	42	43	40	Clear
29	31	34	36	Clear
30	32	26	26	Clear
31	30	34	34	Cloudy

March 1820 Weather

Weather at Sackets Harbor is similar to that of Palmyra

My research begins at the eastern end of Lake Ontario. In the early part of the nineteenth century, Sackets Harbor, New York, was a shipbuilding center for the United States Navy. During the war of 1812 this place played an important role in defending the northern border of the United States from British invasion. Sackets Harbor was once the location for one third of the country's Army and one quarter of its Navy.

In 1820 Dr. W. Wheaton was an officer and surgeon who was stationed with the United States Second Infantry at Madison Barracks in Sackets Harbor. He was located on a bay where the Black River flows into Lake Ontario, about eighty miles from Palmyra. Sackets Harbor and Palmyra are generally in the same weather system which is influenced and homogenized by Lake Ontario (see map).

At the time of Dr. Wheaton's assignment, the U.S. Surgeon General required medical officers to keep weather diaries. At Madison Barracks in 1820 Dr. Wheaton observed and recorded temperatures and weather conditions for each day at 7:00 a.m., 2:00 p.m., and 6:00 p.m. At the end of each month he filed his weather reports to the Office of the Surgeon General, Washington, D.C.

In 1953 the United States Weather Bureau collected climatological records and asked the National Archives and Records Administration to microfilm weather diaries. As a part of this effort, Dr. Wheaton's original 1820 weather diaries from Madison Barracks were included.[6] This record is the

source to determine daily weather conditions and to select a set of possible days for the First Vision. The record is included in full in the notes at the end of this article,[7] with the column for the temperatures and morning weather shown in the accompanying reproductions of the microfilm image. The weather for early spring is summarized in Figure 1, which shows the 7 a.m. temperatures as well as whether the weather was clear (yellow) or cloudy/rainy/snowy (grey).

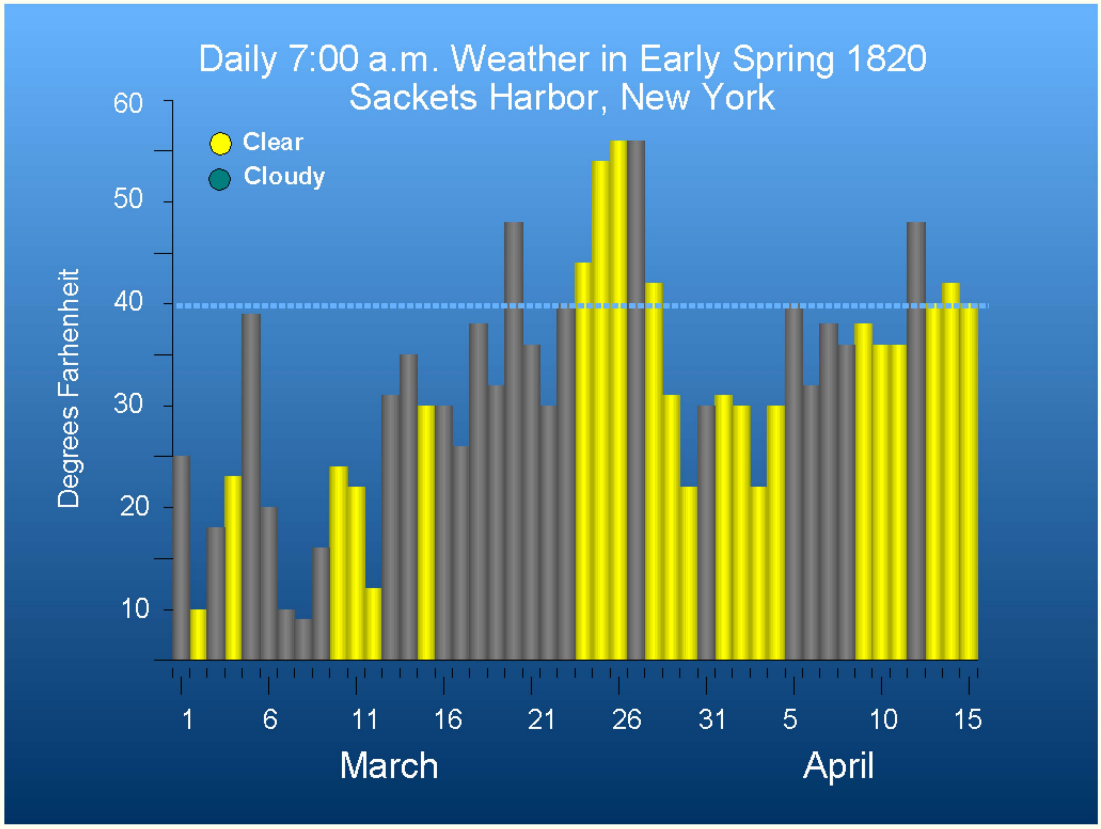


Figure 1. 1820 Early Spring Weather

March in 1820 came in like a lion. During the first two weeks of March there were five snow days for a total accumulation of 23 inches. During these two weeks there were only three of forty-two temperature readings above freezing. It seems appropriate to exclude the first half of March from any consideration for the First Vision. There was an increase in the average temperature during the third week of March with daily readings above freezing. Nevertheless, the weather was mostly cloudy and at no time in the early morning was the temperature above freezing. Beginning on March 22 there is a break in the weather with rising temperatures. Friday March 24 the weather is clear and the morning temperature is above 40°. This day is the first day in the set of possible days for the First Vision. Saturday March 25 is also clear and warm and is the second day in the set of possible days. Sunday morning March 26 is clear with a temperature of 56°, the highest of any day that early spring. This day is the last of three consecutive clear days and is included in the set of possible days. The 2 p.m. temperature for both March 25 and 26 was 64°, so they were both "beautiful days" that might stand out in young Joseph's memory has having been unusually pleasant. Monday morning March 27 the weather becomes cloudy and the temperature begins to drop. During the last four days of March average temperature readings decline and during the first week of April there is snow, sleet and rain. On Thursday April 13 the ice breaks up on Lake Ontario and by Saturday April 15 the weather is clear with morning readings above forty degrees. This day is too late in the spring to be included in the set of possible days.

Now let us turn to a brief overview of how maple syrup is produced, which will indicate that the first two of those days would most likely have been long, arduous work days producing maple syrup. Moreover,

that same cycle indicates that there would have been no more sap to gather nor process on Sunday, March 26, leaving it the sole and ideal candidate to have been the date of the First Vision.

Maple Sugar Production

The Smith family produced maple sugar which was an important source of their food, as well as a commodity which was traded for other foods and services. Maple sugar was about the only source of sugar at that time; cane sugar was rare and expensive. By the late 1800's, cane sugar became much less expensive and replaced maple sugar for most purposes.

"...we commenced making maple sugar of which we averaged one thousand pounds per year."

— Lucy Mack Smith

Sugar Maple Leaf

Lucy Mack Smith wrote of her years in Palmyra, "In the spring after we moved onto the farm we commenced making maple sugar of which we averaged one thousand pounds per year."[8] That's a lot of sugar, and it was all produced during a few weeks of spring. It was not a hobby or casual endeavor for them, it was an important source of sustenance which engaged their full time effort for brief periods entirely governed by the weather. Let's review the production of maple sugar to understand why two of the three possible days for the First Vision would have been heavy work days.

Sugar Maple Tree

The harvesting of maple sugar is extremely temperature dependent. Maple sugar comes only from the northeast of North America and is part of our early history. The English settlers learned maple syrup and sugar production from the Native Americans.[9] The harvest of maple sugar occurs in the early spring. For hundreds of years farmers in New England have tapped millions of trees and have observed that the flow of maple sap is governed by a cycle of freezing and thawing temperatures. In recent years scientists have developed a theory to explain a mechanism by which sap runs. Their investigation includes the measurement of negative and positive pressures in the tree's sapwood. When the temperature is below freezing the cells have a negative pressure relative to the atmosphere. The negative pressure causes water in the ground to move into the roots. The incoming water becomes sap as enzymes in the roots convert starch into sugar. When the temperature rises above freezing the cells develop positive pressure which causes the sap to rise up the tree. Over this cycle the pressures in the sapwood fluctuate from a low of twenty pounds to a high of forty-five pounds per square inch. Thus, negative pressure brings water into the root system and positive pressure pushes sap up the tree.

In an effort to understand the pump effect of a maple tree's negative and positive pressures, scientists measure the dissolution rate of carbon dioxide. When temperatures are below freezing, carbon dioxide has a high dissolution and causes negative pressure. When temperatures are above freezing the dissolution rate falls releasing gas into the sap which produces positive pressure. Sometimes the release of carbon dioxide is so quick that the sap becomes a carbonated "spring tonic". (It is pressurized carbon dioxide which is used to carbonate soft drinks.) This cycle of freezing and thawing temperatures is

required for the sap to continue its flow. If temperatures stay above freezing for more than thirty hours, positive pressures fall as the sapwood literally runs out of gas. When this happens farmers are happy to take a break.

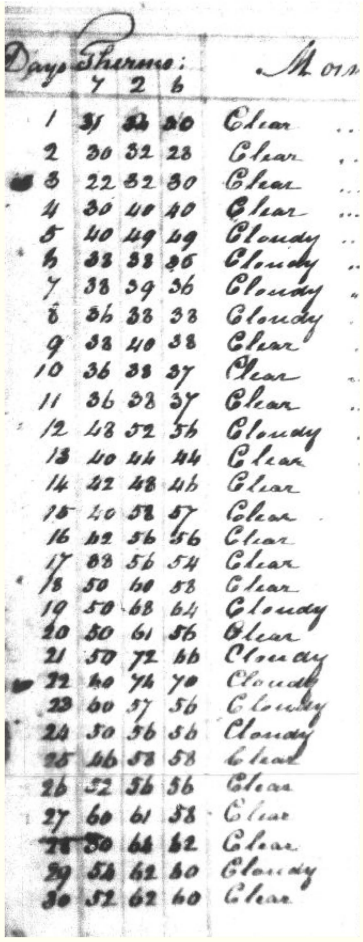
Boiling down sap to make maple sugar.

Sugar makers in 1820 gathered maple sap in wooden buckets. They boiled the sap in a series of iron kettles which hung over an open fire. At one end, where the fire was highest, water boiled off. As the sap thickened into syrup they ladled it into the second kettle, where the fire was lower, and added fresh sap to the first kettle. In this way, they removed the water without burning the sugar. In the last kettle they stirred liquid sugar until it crystallized and then poured it into wooden molds to form blocks. The early settlers considered maple sugar a wonder of the New World.

Some maple syrup producers still use the old ways.

To produce one thousand pounds of maple sugar, as Lucy Smith recorded, the Smith Family in 1820 tapped more than 500 trees, collected 60,000 pounds of sap, and boiled off water by burning 10,000 pounds of wood. From Figure 1 it is possible to determine that the family's sugaring would have started in earnest on Saturday, March 18, and continued until Saturday, March 25. Because sap can go sour like milk, the family has to make sugar

while the sap runs. All the members of the Smith Family would have been fully involved with sugar production. Even if the sap ran for only a few hours, the boiling fire could burn for as much as twenty hours. Each family member understood that the spring harvest of maple sugar was a vital source of food and no other activity was as important. By Saturday noon March 25 at the latest, the temperature readings would have been above freezing for more than thirty hours and the maple sap had stopped running. The boiling fires would have had to be fed for the rest of that day to finish the process. By Saturday night, every one would have been exhausted. Thus, Sunday would have been a rest day even if it had not been the weekly Sabbath day.



Days	Thermo: 7	2	6	Mor
1	31	44	40	Clear
2	30	52	28	Clear
3	22	52	30	Clear
4	30	40	40	Clear
5	40	49	49	Cloudy
6	38	38	36	Cloudy
7	38	39	36	Cloudy
8	36	38	38	Cloudy
9	38	40	38	Clear
10	36	38	37	Clear
11	36	38	37	Clear
12	48	52	36	Cloudy
13	40	44	44	Clear
14	42	48	46	Clear
15	40	58	57	Clear
16	42	56	56	Clear
17	48	56	54	Clear
18	50	60	58	Clear
19	50	68	64	Cloudy
20	50	61	56	Clear
21	50	72	66	Cloudy
22	60	74	70	Cloudy
23	60	57	56	Cloudy
24	50	56	56	Cloudy
25	46	58	58	Clear
26	52	56	56	Clear
27	60	61	58	Clear
28	50	66	62	Clear
29	58	62	60	Cloudy
30	52	62	60	Clear

April 1820 Weather

In preparation for the final draft of this article and to independently verify that scenario, on October 5, 2002 I traveled to the Joseph Smith Birthplace Memorial in Vermont. On that day I arranged to meet John and Shirley Pease as well as Bruce Johnson. These people come from families who have been involved in maple sugaring for as many as seven generations. They have first-hand experience with the effects temperature and weather have on sugar production. Each spring for the last fifty years these New Englanders have "sugared" and they know the intense effort required to collect and to boil sap. I presented to them copies of the March and April 1820 weather diaries and I asked them to describe what the Smith Family would have done to make one thousand pounds of maple sugar. Their review of the weather diaries identified the first "run" as beginning on Sunday, March 5. They estimated that the "run" lasted one day and produced less than one fourth of the season's sugar. The second "run" started on Monday, March 13, and lasted for two or three days. This "run" produced more than one fourth of the season's sugar. It was clear to them that the big "run" started on Saturday, March 18 and with sap running through Friday, March 24. They said that during this "run" the Smith Family would have kept boiling fires for twenty-four hours a day, through Saturday, and that they would have produced about half of the season's sugar. They also said that some members of the family would have worked as much as twenty hours per day as they tried to keep pace with the flow of the sap, so that it would not go sour. They claimed that no other harvest or agricultural activity is as intense and demanding as maple sugaring. Thus they verified the conclusion in detail.

One note from one of Joseph's several accounts of the First Vision implies that he had indeed been cutting timber on the day prior. The editor of the *Pittsburg Gazette* visited Nauvoo in 1843 and interviewed the Prophet. His rendition of what the Prophet said included the following:

> "I immediately went out into the woods where my father had a clearing, and went to the stump where I had stuck my axe when I had quit work, and I kneeled down, and prayed, saying, O Lord, what Church shall I join?"[10]

If that account is accurate, then it would seem to be both an indication that the axe had been left there on the previous day, and that he had been clearing trees with it. Those trees would have been used as the firewood needed to boil down the sugar.

Conclusion

Combining all of this evidence, there were three days of early spring on which the weather qualified as being possible for the First Vision. On the first two of them the Smith family would almost certainly have

been totally occupied in producing maple sugar. On the third of those days, there would have been no more work to do in producing maple sugar, and it would have been a day of rest. That day coincided with Sunday, the weekly Sabbath. Thus it is one day which is indicated as being far more likely than any other for the First Vision. It must have been on the morning of Sunday, March 26, 1820, that Joseph Smith reached out to God and the glorious response changed the course of history. The brief statement that the marvelous event occurred "on the morning of a beautiful, clear day, early in the spring" of 1820 was enough to pinpoint the very day it occurred.

Notes

1. Pratt, J.P. "Symbolism of Passover and of Elijah's Return," *Ensign* **15**, No. 7 (July, 1985), pp. 55-64.
2. Hinckley, Gordon B., "What Are People Asking About Us?" *Ensign* (Nov. 1998), p. 71.
3. Enders, Donald L., "The Sacred Grove," *Ensign*, Apr. 1990, p. 15.
4. Pratt, John P. Enoch Calendar: Another Witness of the Restoration," *Meridian Magazine* (5 Aug 2002).
5. Lefgren, John C., *April Sixth* (Salt Lake City: Deseret Book, 1980).
6. Microfilm T907-358, New York Reel No. 1-152.
7. The following table is taken from Dr. Wheaton's weather diary. Each numbered line represents a day. Temperatures in degrees Fahrenheit for 7:00 a.m., 2:00 p.m., and 6:00 p.m. are in the columns labeled 7, 2, 6. The "Morning" and "Evening" columns are short statements about sky's condition and the direction of the wind. The last column is for "General Remarks."

March	7	2	6	Morning	Evening	General Remarks
Wed 1	25	31	37	Cloudy - N	Cloudy - W	
Thu 2	10	15	21	Clear - W	Clear - W	
Fri 3	18	16	23	Cloudy - N	Snowing - SW	
Sat 4	23	25	31	Clear - NW	Clear - W	Some Snow last night - 3 inches
Sun 5	39	40	40	Cloudy - S	Cloudy - S	
Mon 6	20	21	12	Snowing - N	Cloudy - W	Snow last night - 6 inches
Tue 7	7	16	17	Cloudy - W	Snowing - N	
Wed 8	9	14	14	Snowing - N	Snowing - N	Heavy fall of snow - 16 inches
Thu 9	16	22	20	Snowing - N	Hail - N	
Fri 10	24	26	29	Clear - N	Clear - W	Snow continues until this morning
Sat 11	22	28	23	Clear - N	Clear - N	
Sun 12	12	29	27	Clear - N	Cloudy - N	
Mon 13	31	37	34	Cloudy - N	Cloudy - NW	
Tue 14	35	39	35	Snowing - NE	Snowing - N	This night high winds with snow
Wed 15	30	36	34	Clear - NW	Cloudy - WNW	
Thu 16	30	35	32	Cloudy - WNW	Cloudy - NW	
Fri 17	26	34	32	Cloudy - NE	Clear - NW	
Sat 18	38	42	38	Cloudy - N	Clear - WNW	
Sun 19	32	43	48	Cloudy - NE	Clear - SW	Last night high winds from S and SW
Mon 20	48	46	40	Cloudy - SW	Snowing - NE	Last night high winds from NW
Tue 21	36	40	41	Cloudy - SW	Clear - NW	
Wed 22	30	32	34	Cloudy - S	Clear - NW	
Thu 23	40	46	44	Cloudy - NNE	Clear - SW	Pleasant night with moon light
Fri 24	44	50	49	Clear - NE	Clear - SW	
Sat 25	54	64	50	Clear - SSW	Clear - S	
Sun 26	56	64	64	Clear - SSW	Clear - SW	
Mon 27	55	44	42	Cloudy - W	Clear - W&NW high	High winds this night from W & NW

Tue	28	42	45	40	Clear - W	Clear - NW	
Wed	29	31	34	36	Clear - W	Cloudy -	
Thu	30	22	26	25	Clear - NW	Clear	
Fri	31	30	34	34	Snowing - NW	Snowing - NE	
April	**7**	**2**	**6**		**Morning**	**Evening**	**General Remarks**
Sat	1	31	32	30	Clear - NW 5	Cloudy - NW	High winds
Sun	2	30	32	23	Clear - NNW	Cloudy - NW	
Mon	3	22	32	30	Clear - NE	Clear - WSW	High winds from W and NW
Tue	4	30	40	40	Clear - NE	Clear - WSW	
Wed	5	40	49	49	Cloudy - ESE 6	Cloudy - SSE	Snow and rain this evening
Thu	6	32	33	36	Cloudy - NE	Cloudy - W	
Fri	7	38	39	36	Cloudy - SE	Snowing - ENE	Snow and sleet this evening
Sat	8	36	33	38	Cloudy - ENE	Cloudy - W	
Sun	9	32	40	38	Clear - NE	Clear - W	
Mon	10	36	38	37	Clear .. NW	Clear - NW	High winds
Tue	11	36	38	37	Clear - WSW 6	Clear - SW High	Pleasant evenings
Wed	12	48	52	56	Cloudy - SW	Clear - SW High	
Thu	13	40	44	44	Clear - W	Clear - SW High	This day the ice in the lake is broken up
Fri	14	42	48	46	Clear - N	Clear - SSW Pleasant	
Sat	15	40	58	57	Clear - N	Clear - W	Fine pleasant evening

8. Coray, Martha J., "Biographical Sketches of the Mack Family and Autobiography of Lucy Mack Smith," c. 1845, LDS Church Historical Department, Salt Lake City, Utah, as quoted in footnote 2 of Enders' article referenced above in footnote 3.
9. One current reference on the internet for Native American maple sugar production methods is at http://www.kstrom.net/isk/food/maple.html.
10. Backman, Milton V., Jr., *Joseph Smith's First Vision* (Salt Lake City: Bookcraft, 1971, Appendix G, quoting the editor of the *Pittsburg Gazette* in an account published in the *New York Spectator*, Sept. 23, 1843.