

2019 Projected Visible New Moons and Scriptural Festivals (Israel Visibility / Equinox Method)

January 2019						
S	M	T	W	T	F	S
		1	2	3	4	5
6	7)	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

February 2019						
S	M	T	W	T	F	S
					1	2
3	4	5	6 ⁽³⁰⁾)	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28		

March 2019						
S	M	T	W	T	F	S
					1	2
3	4	5	6	7 ⁽²⁹⁾)	8	9
10	11	12	13	14	15	16
17	18	19	20 VE	21	22	23
24/31	25	26	27	28	29	30

Projected Visibility from Jerusalem, Israel	
)	Projected visible new moon
)+	May be seen one night later
)-	May be seen one night sooner
(##)	indicates no. of days expected in month

April 2019						
S	M	T	W	T	F	S
	1	2	3	4	5	6 ⁽³⁰⁾)
7 AB1	8	9	10	11	12	13
14	15	16	17	18	19	20 PO
21	22 BCP	23	24	25	26	27
28	29	30				

May 2019						
S	M	T	W	T	F	S
			1	2	3	4
5	6 ⁽³⁰⁾)	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	

June 2019						
S	M	T	W	T	F	S
						1
2	3	4 ⁽²⁹⁾)	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23/30	24	25	26	27	28	29

Moon Sighting Data (as seen from Jerusalem)	
Source: Naval Observatory	
Sightings setting Spring and Fall feasts in red.	
Alt.	Altitude (Deg. Above Horizon at Sunset)
Azim.	Azimuth (Deg. East of North)
% Ill.	Percent of Illumination

Date	Sunset	Alt.	Azim.	% Ill.
1/6	16:50	4.0	241.4	0
1/7	16:51	13.1	235.6	2
2/5	17:17	5.6	247.2	1
2/6	17:18	15.6	243.7	3
3/6	17:40	-2.4	26	0
3/7	17:41	8.4	258.1	1
3/8	17:42	19.1	256.2	4
VE - Vernal Equinox: 3/20, 23:58				
4/5	18:01	1.2	272.2	0
4/6	18:02	12.2	270.7	2
AB1 - Abib 1: Scriptural New Year				
5/5	18:22	5.6	283.3	1
5/6	18:22	17.6	280.3	3
6/3	18:41	0.5	293.1	0
6/4	18:41	12.0	287.9	2
7/3	18:49	7.8	290.5	1
8/1	18:36	5.4	287.6	1
8/2	18:35	15.2	276.9	4
8/30	18:06	3.6	280.8	0
8/31	18:05	12.3	269.1	3
AE - Autumnal Equinox: 9/23, 09:50				
9/29	17:27	9.5	260.2	1
10/28	16:54	5.6	252.7	0
10/29	16:53	13.2	241.0	3
11/26	16:36	0.5	248.0	0
11/27	16:36	8.5	238.0	1
12/26	16:42	2.5	240.1	0
12/27	16:43	11.7	232.8	2

July 2019						
S	M	T	W	T	F	S
	1	2	3 ⁽²⁹⁾)	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			

August 2019						
S	M	T	W	T	F	S
				1	2 ⁽³⁰⁾)	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31 ⁽²⁹⁾)

September 2019						
S	M	T	W	T	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23 AE	24	25	26	27	28
29 ⁽²⁹⁾)	30					

October 2019						
S	M	T	W	T	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29 ⁽³⁰⁾)	30	31		

November 2019						
S	M	T	W	T	F	S
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27 ⁽²⁹⁾)	28	29	30

December 2019						
S	M	T	W	T	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27 ⁽³⁰⁾)	28
29	30	31				

Projected Festival Dates

Passover Meal, Night to be Much Observed: Sat Night 4/20 Feast of Unleavened Bread: < Sun 4/21 – Sat 4/27 Feast of Weeks, Shavuot (Pentecost): < Mon 6/10	Trumpets (Yom Teruah): < Mon 9/30 Day of Atonement: < Wed 10/9 Feast of Tabernacles: < Mon 10/14 – Mon 10/21
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< Begins evening before

Phases of the Moon

U.S. Naval Observatory Astronomical Applications Department

Date and Time (Universal Time)			
New Moon	First Quarter	Full Moon	Last Quarter
2019 Jan 06 01:28	2019 Jan 14 06:45	2019 Jan 21 05:16	2019 Jan 27 21:10
2019 Feb 04 21:04	2019 Feb 12 22:26	2019 Feb 19 15:53	2019 Feb 26 11:28
2019 Mar 06 16:04	2019 Mar 14 10:27	2019 Mar 21 01:43	2019 Mar 28 04:10
2019 Apr 05 08:50	2019 Apr 12 19:06	2019 Apr 19 11:12	2019 Apr 26 22:18
2019 May 04 22:45	2019 May 12 01:12	2019 May 18 21:11	2019 May 26 16:34
2019 Jun 03 10:02	2019 Jun 10 05:59	2019 Jun 17 08:31	2019 Jun 25 09:46
2019 Jul 02 19:16	2019 Jul 09 10:55	2019 Jul 16 21:38	2019 Jul 25 01:18
2019 Aug 01 03:12	2019 Aug 07 17:31	2019 Aug 15 12:29	2019 Aug 23 14:56
2019 Aug 30 10:37	2019 Sep 06 03:10	2019 Sep 14 04:33	2019 Sep 22 02:41
2019 Sep 28 18:26	2019 Oct 05 16:47	2019 Oct 13 21:08	2019 Oct 21 12:39
2019 Oct 28 03:38	2019 Nov 04 10:23	2019 Nov 12 13:34	2019 Nov 19 21:11
2019 Nov 26 15:06	2019 Dec 04 06:58	2019 Dec 12 05:12	2019 Dec 19 04:57
2019 Dec 26 05:13	2020 Jan 03 04:45	--	--

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2019 Calendar - Jerusalem Israel - 3 - Moon Alt.txt

2019 Calendar - Jerusalem - Moon Alt

Jerusalem:

Longitude E35 13

Latitude N31 47

Time Zone 2 hours east of Greenwich (renders standard time for convenient cross-reference with sunset times)

Date	Sunset	Alt.	Azim.	% Ill.
1/6	16:50	4.0	241.4	0.00
1/7	16:51	13.1	235.6	0.02
2/5	17:17	5.6	247.2	0.01
2/6	17:18	15.6	243.7	0.03
3/6	17:40	-2.4	260.0	0.00
3/7	17:41	8.4	258.1	0.01
3/8	17:42	19.1	256.2	0.04
4/5	18:01	1.2	272.2	0.00
4/6	18:02	12.2	270.7	0.02
5/5	18:22	5.6	283.3	0.01
5/6	18:22	17.6	280.3	0.03
6/3	18:41	0.5	293.1	0.00
6/4	18:41	12.0	287.9	0.02
7/2	18:49	-3.4	298.3	0.00
7/3	18:49	7.8	290.5	0.01
8/1	18:36	5.4	287.6	0.01
8/2	18:35	15.2	276.9	0.04
8/30	18:06	3.6	280.8	0.00
8/31	18:05	12.3	269.1	0.03
9/28	17:29	1.5	272.4	0.00
9/29	17:27	9.5	260.2	0.01
10/28	16:54	5.6	252.7	0.00
10/29	16:53	13.2	241.0	0.03
11/26	16:36	0.5	248.0	0.00
11/27	16:36	8.5	238.0	0.01
12/26	16:42	2.5	240.1	0.00
12/27	16:43	11.7	232.8	0.02

Formatted, Tab-Separated Data Pasted from Word:

Date	Sunset	Alt.	Azim.	% Ill.
1/6	16:50	4.0	241.4	0
1/7	16:51	13.1	235.6	2
2/5	17:17	5.6	247.2	1
2/6	17:18	15.6	243.7	3
3/6	17:40	-2.4	26	0
3/7	17:41	8.4	258.1	1
3/8	17:42	19.1	256.2	4
4/5	18:01	1.2	272.2	0

2019 Calendar - Jerusalem Israel - 3 - Moon Alt.txt

4/6	18:02	12.2	270.7	2
5/5	18:22	5.6	283.3	1
5/6	18:22	17.6	280.3	3
6/3	18:41	0.5	293.1	0
6/4	18:41	12.0	287.9	2
7/2	18:49	-3.4	298.3	0
7/3	18:49	7.8	290.5	1
8/1	18:36	5.4	287.6	1
8/2	18:35	15.2	276.9	4
8/30	18:06	3.6	280.8	0
8/31	18:05	12.3	269.1	3
9/28	17:29	1.5	272.4	0
9/29	17:27	9.5	260.2	1
10/28	16:54	5.6	252.7	0
10/29	16:53	13.2	241.0	3
11/26	16:36	0.5	248.0	0
11/27	16:36	8.5	238.0	1
12/26	16:42	2.5	240.1	0
12/27	16:43	11.7	232.8	2

VE - Vernal Equinox: 3/20, 23:58

AB1 - Abib 1: Scriptural New Year

AE - Autumnal Equinox: 9/23, 09:50

Location: 0 35 13, N31 47

JERUSALEM
Rise and Set for the Sun for 2019

Astronomical Applications Dept.
U. S. Naval Observatory
Washington, DC 20392-5420

Zone: 2h East of Greenwich

Day	Jan.		Feb.		Mar.		Apr.		May		June		July		Aug.		Sept.		Oct.		Nov.		Dec.	
	Rise	Set	Rise	Set	Rise	Set	Rise	Set	Rise	Set	Rise	Set	Rise	Set	Rise	Set	Rise	Set	Rise	Set	Rise	Set	Rise	Set
	h m	h m	h m	h m	h m	h m	h m	h m	h m	h m	h m	h m	h m	h m	h m	h m	h m	h m	h m	h m	h m	h m	h m	h m
01	0639	1646	0633	1713	0607	1737	0528	1758	0454	1819	0435	1840	0437	1849	0455	1836	0514	1804	0533	1725	0555	1650	0621	1635
02	0639	1647	0632	1714	0606	1737	0527	1759	0453	1820	0434	1840	0438	1849	0455	1835	0515	1802	0533	1723	0556	1649	0622	1635
03	0639	1648	0631	1715	0605	1738	0526	1800	0452	1820	0434	1841	0438	1849	0456	1834	0516	1801	0534	1722	0557	1648	0622	1635
04	0640	1648	0631	1716	0603	1739	0525	1800	0451	1821	0434	1841	0438	1849	0457	1834	0516	1800	0535	1721	0557	1648	0623	1635
05	0640	1649	0630	1717	0602	1740	0523	1801	0450	1822	0434	1842	0439	1848	0457	1833	0517	1759	0535	1720	0558	1647	0624	1635
06	0640	1650	0629	1718	0601	1740	0522	1802	0450	1822	0434	1842	0439	1848	0458	1832	0517	1757	0536	1718	0559	1646	0625	1635
07	0640	1651	0628	1718	0600	1741	0521	1802	0449	1823	0433	1843	0440	1848	0459	1831	0518	1756	0537	1717	0600	1645	0626	1635
08	0640	1652	0628	1719	0559	1742	0520	1803	0448	1824	0433	1843	0440	1848	0459	1830	0519	1755	0537	1716	0601	1644	0626	1635
09	0640	1652	0627	1720	0557	1743	0518	1804	0447	1825	0433	1844	0441	1848	0500	1829	0519	1753	0538	1715	0602	1644	0627	1635
10	0640	1653	0626	1721	0556	1743	0517	1804	0446	1825	0433	1844	0441	1847	0500	1828	0520	1752	0539	1713	0603	1643	0628	1635
11	0640	1654	0625	1722	0555	1744	0516	1805	0446	1826	0433	1844	0442	1847	0501	1827	0520	1751	0539	1712	0603	1642	0629	1636
12	0640	1655	0624	1723	0554	1745	0515	1806	0445	1827	0433	1845	0442	1847	0502	1826	0521	1750	0540	1711	0604	1642	0629	1636
13	0640	1656	0623	1724	0552	1745	0514	1806	0444	1827	0433	1845	0443	1847	0502	1825	0522	1748	0541	1710	0605	1641	0630	1636
14	0640	1657	0622	1725	0551	1746	0512	1807	0443	1828	0433	1846	0443	1846	0503	1824	0522	1747	0541	1709	0606	1641	0631	1636
15	0640	1658	0622	1725	0550	1747	0511	1808	0443	1829	0433	1846	0444	1846	0504	1823	0523	1746	0542	1707	0607	1640	0631	1637
16	0639	1658	0621	1726	0549	1748	0510	1809	0442	1829	0433	1846	0445	1846	0504	1822	0523	1744	0543	1706	0608	1640	0632	1637
17	0639	1659	0620	1727	0547	1748	0509	1809	0441	1830	0433	1847	0445	1845	0505	1821	0524	1743	0543	1705	0609	1639	0633	1637
18	0639	1700	0619	1728	0546	1749	0508	1810	0441	1831	0434	1847	0446	1845	0506	1820	0525	1742	0544	1704	0610	1639	0633	1638
19	0639	1701	0618	1729	0545	1750	0507	1811	0440	1831	0434	1847	0446	1844	0506	1819	0525	1740	0545	1703	0610	1638	0634	1638
20	0638	1702	0617	1730	0544	1750	0505	1811	0440	1832	0434	1847	0447	1844	0507	1818	0526	1739	0546	1702	0611	1638	0634	1639
21	0638	1703	0616	1730	0542	1751	0504	1812	0439	1833	0434	1848	0448	1843	0507	1817	0526	1738	0546	1701	0612	1637	0635	1639
22	0638	1704	0615	1731	0541	1752	0503	1813	0438	1833	0434	1848	0448	1843	0508	1816	0527	1736	0547	1700	0613	1637	0635	1640
23	0637	1705	0613	1732	0540	1752	0502	1813	0438	1834	0435	1848	0449	1842	0509	1814	0528	1735	0548	1659	0614	1637	0636	1640
24	0637	1706	0612	1733	0539	1753	0501	1814	0438	1835	0435	1848	0449	1842	0509	1813	0528	1734	0549	1658	0615	1636	0636	1641
25	0636	1707	0611	1734	0537	1754	0500	1815	0437	1835	0435	1848	0450	1841	0510	1812	0529	1732	0549	1657	0616	1636	0637	1641
26	0636	1707	0610	1734	0536	1754	0459	1815	0437	1836	0435	1848	0451	1840	0511	1811	0529	1731	0550	1656	0617	1636	0637	1642
27	0635	1708	0609	1735	0535	1755	0458	1816	0436	1837	0436	1849	0451	1840	0511	1810	0530	1730	0551	1655	0617	1636	0637	1643
28	0635	1709	0608	1736	0533	1756	0457	1817	0436	1837	0436	1849	0452	1839	0512	1809	0531	1729	0552	1654	0618	1635	0638	1643
29	0634	1710			0532	1756	0456	1818	0435	1838	0436	1849	0453	1838	0512	1807	0531	1727	0553	1653	0619	1635	0638	1644
30	0634	1711			0531	1757	0455	1818	0435	1838	0437	1849	0453	1838	0513	1806	0532	1726	0553	1652	0620	1635	0638	1645
31	0633	1712			0530	1758			0435	1839			0454	1837	0514	1805			0554	1651			0639	1645

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Apsides and Seasons

U.S. Naval Observatory Astronomical Applications Department

2019

2 hours East of Greenwich

Phenomenon	Date	Time
Perihelion	2019 Jan 03	07:20
Equinox	2019 Mar 20	23:58
Solstice	2019 Jun 21	17:54
Aphelion	2019 Jul 05	00:11
Equinox	2019 Sep 23	09:50
Solstice	2019 Dec 22	06:19

(Note: Daylight Saving Time conversion is not included)

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Calendar for Year **2019** (United States)

January							February							March						
Su	Mo	Tu	We	Th	Fr	Sa	Su	Mo	Tu	We	Th	Fr	Sa	Su	Mo	Tu	We	Th	Fr	Sa
		1	2	3	4	5						1	2						1	2
6	7	8	9	10	11	12	3	4	5	6	7	8	9	3	4	5	6	7	8	9
13	14	15	16	17	18	19	10	11	12	13	14	15	16	10	11	12	13	14	15	16
20	21	22	23	24	25	26	17	18	19	20	21	22	23	17	18	19	20	21	22	23
27	28	29	30	31			24	25	26	27	28			24	25	26	27	28	29	30
														31						
5:●	14:☉	21:○	27:☾				4:●	12:☾	19:○	26:☾				6:●	14:☾	20:○	28:☾			

April							May							June						
Su	Mo	Tu	We	Th	Fr	Sa	Su	Mo	Tu	We	Th	Fr	Sa	Su	Mo	Tu	We	Th	Fr	Sa
	1	2	3	4	5	6			1	2	3	4							1	
7	8	9	10	11	12	13	5	6	7	8	9	10	11	2	3	4	5	6	7	8
14	15	16	17	18	19	20	12	13	14	15	16	17	18	9	10	11	12	13	14	15
21	22	23	24	25	26	27	19	20	21	22	23	24	25	16	17	18	19	20	21	22
28	29	30					26	27	28	29	30	31		23	24	25	26	27	28	29
														30						
5:●	12:☾	19:○	26:☾				4:●	11:☾	18:○	26:☾				3:●	10:☾	17:○	25:☾			

July							August							September						
Su	Mo	Tu	We	Th	Fr	Sa	Su	Mo	Tu	We	Th	Fr	Sa	Su	Mo	Tu	We	Th	Fr	Sa
	1	2	3	4	5	6					1	2	3	1	2	3	4	5	6	7
7	8	9	10	11	12	13	4	5	6	7	8	9	10	8	9	10	11	12	13	14
14	15	16	17	18	19	20	11	12	13	14	15	16	17	15	16	17	18	19	20	21
21	22	23	24	25	26	27	18	19	20	21	22	23	24	22	23	24	25	26	27	28
28	29	30	31				25	26	27	28	29	30	31	29	30					
2:●	9:☾	16:○	24:☾	31:●			7:☾	15:○	23:☾	30:●				5:☾	14:○	21:☾	28:●			

October							November							December						
Su	Mo	Tu	We	Th	Fr	Sa	Su	Mo	Tu	We	Th	Fr	Sa	Su	Mo	Tu	We	Th	Fr	Sa
		1	2	3	4	5						1	2	1	2	3	4	5	6	7
6	7	8	9	10	11	12	3	4	5	6	7	8	9	8	9	10	11	12	13	14
13	14	15	16	17	18	19	10	11	12	13	14	15	16	15	16	17	18	19	20	21
20	21	22	23	24	25	26	17	18	19	20	21	22	23	22	23	24	25	26	27	28
27	28	29	30	31			24	25	26	27	28	29	30	29	30	31				
5:☾	13:○	21:☾	27:●				4:☾	12:○	19:☾	26:●				4:☾	12:○	18:☾	26:●			

Holidays and Observances:

Jan 1 New Year's Day	May 5 Cinco de Mayo	Oct 31 Halloween
Jan 21 Martin Luther King Jr. Day	May 12 Mother's Day	Nov 11 Veterans Day
Feb 14 Valentine's Day	May 27 Memorial Day	Nov 28 Thanksgiving Day
Feb 18 Presidents' Day (Most regions)	Jun 16 Father's Day	Nov 29 Black Friday
Mar 17 St. Patrick's Day	Jul 4 Independence Day	Dec 24 Christmas Eve
Apr 15 Tax Day	Sep 2 Labor Day	Dec 25 Christmas Day
Apr 21 Easter Sunday	Oct 14 Columbus Day (Most regions)	Dec 31 New Year's Eve