

## Celestial Events for 2019

Hōkūlani Imaginarium

Windward Community College

Joseph Ciotti

all times HST

Month	Day	Time	Celestial Event 2019
Jan	2	7:20 pm	Perihelion (earth closest to sun)
	3	best after midnight	Quadrantid Meteor Shower peak
	5	3:28 pm	New Moon
	8	6:29 pm	Moon at apogee (farthest from earth)
	13	6:45 am	<b>Mercury &amp; Saturn conjunction:</b> 1.7° apart
	13	8:45 pm	First Quarter (Waxing Half) Moon
	20	7:12 pm (maximum)	<b>TOTAL LUNAR ECLIPSE</b> <b>6:07 pm moonrise to 9:48 pm</b> <b>(max at 7:12 pm)</b>
	20	7:16 pm	Full Moon <b>Super Full Moon:</b> largest/brightest full moon that occurs nearest perigee
	21	9:58 am	Moon at perigee (closest to earth)  Perigean Spring (King) Tides (2.6 ft)
	22	4:30 am	<b>Venus &amp; Jupiter conjunction:</b> 2.4° apart
	27	11:10 am	Last Quarter (Waning Half) Moon
	31	5 am	<b>Venus &amp; Waning Crescent Moon conjunction:</b> 0.4° apart
Feb	4	11:04 am	New Moon <b>Micro New Moon:</b> smallest new moon that occurs nearest apogee
	4	11:26 pm	Moon at apogee (farthest from earth)
	12	12:26 pm	First Quarter (Waxing Half) Moon
	18	6:00 am	<b>Venus &amp; Saturn conjunction:</b> 1.1° apart
	18	11:06 pm	Moon at perigee (closest to earth)

	19	5:53 am	Full Moon <b>Super Full Moon:</b> largest/brightest full moon that occurs nearest perigee
	26	1:28 am	Last Quarter (Waning Half) Moon
Mar	4	1:25 am	Moon at apogee (farthest from earth)
	6	6:04 am	New Moon
	14	12:27 am	First Quarter (Waxing Half) Moon
	14	sunrise 6:41 am sunset 6:41 pm	Spring Equilux (equilux: equal day & night—12 hrs of daylight & 12 hrs of nighttime)
	19	9:47 am	Moon at perigee (closest to earth)
	20	11:58 am	Vernal Equinox (first day of spring)
	20	3:43 pm	Full Moon
	27	6:10 pm	Last Quarter (Waning Half) Moon
	31	2:14 pm	Moon at apogee (farthest from earth)
Apr	4	10:50 pm	New Moon
	12	9:06 am	First Quarter (Waxing Half) Moon
	16	12:02 pm	Moon at perigee (closest to earth)
	19	1:12 am	Full Moon
	22	best after midnight	Lyrid Meteor Shower peak
May	4	12:45 pm	New Moon
	6	best after midnight	Eta Aquarid Meteor Shower peak
	11	3:12 pm	First Quarter (Waxing Half) Moon
	13	11:53 am	Moon at perigee (closest to earth)
	18	11:11 am	Full Moon <b>Blue Moon:</b> third Full Moon in a season that has four Full Moons
	18	12:17 pm	Hilo (kau ka lā i ka lolo = “Lāhaina Noon”)
	18	12:21 pm	Kailua-Kona (kau ka lā i ka lolo = “Lāhaina Noon”)
	24	12:21 pm	Hāna (kau ka lā i ka lolo = “Lāhaina Noon”)

	24	12:23 pm	Kahului (kau ka lā i ka lolo = “Lāhaina Noon”)
	24	12:25 pm	Lāna‘i City (kau ka lā i ka lolo = “Lāhaina Noon”)
	25	12:24 pm	Lāhaina (kau ka lā i ka lolo = “Lāhaina Noon”)
	26	3:27 am	Moon at apogee (farthest from earth)
	26	6:33 am	Last Quarter (Waning Half) Moon
	26	12:25 pm	Kaunakakai (kau ka lā i ka lolo = “Lāhaina Noon”)
	27	12:28 pm	Kāne‘ohe (kau ka lā i ka lolo = “Lāhaina Noon”)
	27	12:29 pm	Honolulu (kau ka lā i ka lolo = “Lāhaina Noon”)
	31	12:35 pm	Līhue (kau ka lā i ka lolo = “Lāhaina Noon”)
Jun	3	12:02 am	New Moon
	7	1:21 pm	Moon at perigee (closest to earth)
	9	7:59 pm	First Quarter (Waxing Half) Moon
	16	10:31 pm	Full Moon
	19	8:00 pm	<b>Mercury &amp; Mars conjunction: 0.4° apart</b>
	21	5:54 am	<b>Summer Solstice (first day of summer)</b>
	22	9:50 pm	Moon at apogee (farthest from earth)
	24	11:46 pm	Last Quarter (Waning Half) Moon
Jul	2	9:16 am	New Moon
	4	12:11 pm	<b>Aphelion (earth farthest from sun)</b>
	4	6:54 pm	Moon at perigee (closest to earth)
	9	12:55 am	First Quarter (Waxing Half) Moon
	12	12:43 pm	Līhue (kau ka lā i ka lolo = “Lāhaina Noon”)
	15	12:37 pm	Kāne‘ohe (kau ka lā i ka lolo = “Lāhaina Noon”)
	15	7:30 pm	<b>Saturn &amp; Full Moon conjunction: 0.7° apart</b>
	16	11:38 am	Full Moon
	16	12:38 pm	Honolulu (kau ka lā i ka lolo = “Lāhaina Noon”)

	17	12:35 pm	Kaunakakai (kau ka lā i ka lolo = “Lāhaina Noon”)
	18	12:32 pm	Kahului (kau ka lā i ka lolo = “Lāhaina Noon”)
	18	12:33 pm	Lāhaina (kau ka lā i ka lolo = “Lāhaina Noon”)
	19	12:30 pm	Hāna (kau ka lā i ka lolo = “Lāhaina Noon”)
	19	12:34 pm	Lāna‘i City (kau kā la i ka lolo = “Lāhaina Noon”)
	<b>20</b>		<b>50th Anniversary of Apollo 11: First Human Landing on Moon</b>
	20	2:01 pm	Moon at apogee (farthest from earth)
	24	12:27 pm	Hilo (kau ka lā i ka lolo = “Lāhaina Noon”)
	24	12:31 pm	Kailua-Kona (kau ka lā i ka lolo = “Lāhaina Noon”)
	24	3:18 pm	Last Quarter (Waning Half) Moon
	28	best after midnight	Delta Aquarid Meteor Shower peak
	31	5:12 pm	New Moon <b>Black Moon: second New Moon in the same calendar month</b>
Aug	1	9:08 pm	Moon at perigee (closest to earth)  Perigean Spring (King) Tides (2.6 ft)
	7	7:31 am	First Quarter (Waxing Half) Moon
	12	1:00 am	<b>Saturn &amp; Waxing Gibbous Moon conjunction: 0.6° apart</b>
	12	best after midnight	Perseid Meteor Shower peak
	15	2:29 am	Full Moon
	17	12:50 am	Moon at apogee (farthest from earth)
	23	4:56 am	Last Quarter (Waning Half) Moon
	30	12:37 am	New Moon <b>Super New Moon: largest new moon that occurs nearest perigee</b>
	30	5:57 am	Moon at perigee (closest to earth)
Sep	5	5:10 pm	First Quarter (Waxing Half) Moon

	13	3:32 am	Moon at apogee (farthest from earth)
	13	6:33 pm	Full Moon <b>Micro Full Moon:</b> smallest/dimmest full moon that occurs nearest apogee
	13	6:45 pm	<b>Mercury &amp; Venus conjunction:</b> 1.0° apart
	21	4:41 pm	Last Quarter (Waning Half) Moon
	22	9:50 pm	Autumnal Equinox (first day of fall)
	27	4:27 pm	Moon at perigee (closest to earth)
	28	sunrise 6:22 am sunset 6:22 pm	Fall Equilux (equilux: equal day & night—12 hrs of daylight & 12 hrs of nighttime)
	28	8:26 am	New Moon <b>Super New Moon:</b> largest new moon that occurs nearest perigee
Oct	5	6:47 am	First Quarter (Waxing Half) Moon
	8	best before midnight	Draconid Meteor Shower peak
	10	8:29 am	Moon at apogee (farthest from earth)
	13	11:08 am	Full Moon
	21	2:39 am	Last Quarter (Waning Half) Moon
	21	best after midnight	Orionid Meteor Shower peak
	26	12:41 am	Moon at perigee (closest to earth)
	27	5:38 pm	New Moon
	30	6:30 pm	<b>Mercury &amp; Venus conjunction:</b> 2.5° apart
Nov	4	12:23 am	First Quarter (Waxing Half) Moon
	6	10:37 pm	Moon at apogee (farthest from earth)
	11		Transit of Mercury 6:40 am (sunrise) to 8:04 am  Next transit of Mercury will occur in 2039
	12	best after midnight	North Taurid Meteor Shower peak

	<b>17</b>	<b>5:49 pm</b>	<b>Pleiades rise at sunset</b> (first condition needed for declaring start of Makahiki; must wait until the sighting of first visible crescent moon after this date)
	17	best after midnight	Leonid Meteor Shower peak
	19	11:11 am	Last Quarter (Waning Half) Moon
	22	9:54 pm	Moon at perigee (closest to earth)
	24	6:00 am	<b>Triangular conjunction: Waning Crescent Moon with Mercury and Mars</b> (each side about 5.0° apart)
	24	6:30 pm	<b>Venus &amp; Jupiter conjunction: 1.6° apart</b>
	26	5:06 am	New Moon
	<b>27</b>	<b>sunset</b>	<b>Beginning of Makahiki</b> with sighting of first visible crescent moon (Hilo moon) after rise of Pleiades (this unofficially could be consider beginning of Makahiki; technically someone must visually sight the first crescent moon that occurs after the Mahakihi rise at sunset)
Dec	3	8:58 pm	First Quarter (Waxing Half) Moon
	4	6:09 pm	Moon at apogee (farthest from earth)
	11	6:00 pm	<b>Venus &amp; Saturn conjunction: 2.0° apart</b>
	11	7:12 pm	Full Moon
	13	best after midnight	Geminid Meteor Shower peak
	18	10:30 am	Moon at perigee (closest to earth)
	18	6:57 pm	Last Quarter (Waning Half) Moon
	21	6:19 pm	Winter Solstice (first day of winter)
	21	best after midnight	Ursid Meteor Shower peak
	25	7:13 pm	New Moon
	28	7 pm	<b>Venus &amp; Waxing Crescent Moon conjunction: 1.4° apart</b>