

## Celestial Events for 2023

Hökūlani Imaginarium  
Windward Community College  
Joseph Ciotti, PhD

all times HST

Month	Day	Time	Celestial Event 2023
Jan	3	6:30 pm - 4:00 am	Conjunction of Moon-Mars (0.5° apart)
	4	1:00 am - 6:30 am	Quadrantid Meteor Shower peak
	4	6:17 am	Perihelion (earth closest to sun)
	6	1:08 pm	Full Moon <b>Micro Full Moon: smallest/dimmest full moon— occurs nearest apogee</b>
	7	11:19 pm	Moon at apogee (farthest from earth)
	14	4:10 pm	Last Quarter (Waning Half) Moon
	16	7:09:41am	Latest sunrise ever occurs in Honolulu
	21	4:05 am	Perigean Spring (King) Tides (2.56 ft) — Honolulu Harbor
	21	10:53 am	New Moon <b>Super New Moon: largest new moon—occurs nearest perigee</b>
	21	10:58 am	Moon at perigee (closest to earth)
	22	6:30 pm - 7:45 pm	Conjunction of Venus-Saturn (0.5° apart)
	25	6:30 pm - 10:30 pm	Conjunction of Moon-Jupiter (1.7° apart)
	27	7 am	Mercury at highest altitude (20°) in morning sky
	28	5:19 am	First Quarter (Waxing Half) Moon
	30	6:30 pm - 2:15 am	Conjunction of Moon-Mars (0.4° apart)
Feb	3	10:55 pm	Moon at apogee (farthest from earth)
	5	8:29 am	Full Moon <b>Micro Full Moon: smallest/dimmest full moon—occurs nearest apogee</b>
	11	12:45:04 pm	Latest “noon”— latest time sun crosses the meridian in Honolulu (latest apparent noon)
	13	6:01 am	Last Quarter (Waning Half) Moon
	18	11:06 pm	Moon at perigee (closest to earth)
	19	9:06 pm	New Moon <b>Super New Moon: largest new moon—occurs nearest perigee</b>
	21	6:45 pm - 8:30 pm	Conjunction of Moon-Venus (4° apart)
	22	6:45 pm - 9:00 pm	Conjunction of Moon-Jupiter (2.6° apart)
	26	10:06 pm	First Quarter (Waxing Half) Moon
	27	6:30 pm -	Conjunction of Moon-Mars (1.2° apart)

		2:15 pm	
Mar	1	6:45 pm - 8:45 pm	Conjunction of Venus-Jupiter (0.4° apart)
	3	8:01 am	Moon at apogee (farthest from earth)
	7	2:40 am	Full Moon
	12	2:00 am	Daylight Saving Time begins on mainland [Note: Hawaii does not observe DST]
	12	sunrise 6:41:09 am sunset 6:40:50 pm	Spring Equilux (equilux: equal day & night—12 hrs of daylight & 12 hrs of nighttime)
	14	4:08 pm	Last Quarter (Waning Half) Moon
	19	5:16 am	Moon at perigee (closest to earth)
	20	11:25 am	Vernal Equinox (first day of spring)
	21	7:23 am	New Moon
	22	7:00 pm - 7:45 pm	Conjunction of Moon-Jupiter (3.8° apart)
	23	7:15 pm - 8:30 pm	Conjunction of Moon-Venus (3.6° apart)
	27	7:15 pm - 12:45 am	Conjunction of Moon-Mars (2.3° apart)
	28	4:32 pm	First Quarter (Waxing Half) Moon
	31	1:18 am	Moon at apogee (farthest from earth)
Apr	5	6:35 pm	Full Moon
	10	7:30 pm - 9:30 pm	Conjunction of Venus-Pleiades (2.5° apart)
	12	7:00 pm	Mercury at highest point in evening sky (17° altitude)
	12	11:11 pm	Last Quarter (Waning Half) Moon
	15	4:22 pm	Moon at perigee (closest to earth)
	19	6:12 pm	New Moon
	22	7:00 pm - 9:45 pm	Conjunction of Moon-Venus (4.3° apart)
	23	10 pm – 5 am	Lyrid Meteor Shower peak
	25	7:15 pm - 12:10 am	Conjunction of Moon-Mars (3.3° apart)
	27	11:20 am	First Quarter (Waxing Half) Moon
	27	8:43 pm	Moon at apogee (farthest from earth)
May	5	5:14 am - 5:55 am	<b>Penumbral LUNAR ECLIPSE</b> <b>begins: 5:14 am</b> <b>local max: 5:52 am</b> <b>ends: 5:55 am (moonset)</b>

	5	7:34 am	Full Moon
	6	2:00 am - 5:00 am	Eta Aquarid Meteor Shower peak
	10	6:57 pm	Moon at perigee (closest to earth)
	12	4:28 am	Last Quarter (Waning Half) Moon
	13	2:15 am - 5:30 am	Conjunction of Moon-Saturn (4.0° apart)
	17	4:30 am - 5:30 am	Conjunction of Moon-Jupiter (2.0° apart)
	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”)
	19	5:53 am	New Moon <b>Black Moon: third New Moon in a season with four New Moons</b>
	22	7:30 pm - 10:15 pm	Conjunction of Moon-Venus (4.5° apart)
	23	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”)
	24	7:30 pm – 11:15 pm	Conjunction of Moon-Mars (5.4° apart)
	25	12:24 pm	Lāhaina (kau ka lā i ka lolo = “Lāhaina Noon”)
	25	3:39 pm	Moon at apogee (farthest from earth)
	26	12:25 pm	Kaunakakai (kau ka lā i ka lolo = “Lāhaina Noon”)
	26	7:10 pm	Venus at highest altitude in evening sky (43°)
	27	5:22 am	First Quarter (Waxing Half) Moon
	27	12:28 pm	<b>Kāne‘ohe (kau ka lā i ka lolo = “Lāhaina Noon”)</b>
	27	12:29 pm	<b>Honolulu (kau ka lā i ka lolo = “Lāhaina Noon”)</b>
	31	12:35 pm	Līhue (kau ka lā i ka lolo = “Lāhaina Noon”)
Jun	2	5:30 am	Mercury at highest altitude in morning sky (18°)
	3	5:42 pm	Full Moon
	6	5:46:54 am	Earliest sunrise ever occurs in Honolulu
	6	1:07 pm	Moon at perigee (closest to earth)
	10	9:31 am	Last Quarter (Waning Half) Moon
	14	3:00 am – 5:30 am	Conjunction of Moon-Jupiter (5.1° apart)
	17	6:37 pm	New Moon
	21	4:48 am	Summer Solstice (first day of summer) Honolulu sunrise 5:48:36 am; sunset 7:16:50 pm Longest Day: 13h 28m 14s
	21	7:45 pm – 10:00 pm	Conjunction of Moon-Venus-Mars (4° apart)

	22	8:30 am	Moon at apogee (farthest from earth)
	25	9:50 pm	First Quarter (Waxing Half) Moon
	30	7:345 pm - 10:00 pm	Conjunction of Venus-Mars (3.4° apart)
Jul	3	1:39 am	Full Moon
	3	4:44 pm	Perigean Spring (King) Tides (2.65 ft) — Honolulu Harbor
	4	12:28 pm	Moon at perigee (closest to earth)
	4	7:18:18 pm	Latest sunset ever occurs in Honolulu
	6	10:07 am	Aphelion (earth farthest from sun)
	7	4:15 am - 5:30 am	Conjunction of Moon-Saturn (6.1° apart)
	9	3:48 pm	Last Quarter (Waning Half) Moon
	9	7:15 pm	Venus at brightest in evening (mag -4.5)
	11	1:45 am - 5:30 am	Conjunction of Moon-Jupiter (3.4° apart)
	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”)
	16	12:38 pm	Honolulu (kau ka lā i ka lolo = “Lāhaina Noon”)
	17	8:32 am	New Moon
	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”)
	19	8:56 pm	Moon at apogee (farthest from earth)
	20	7:45 pm - 9:30 pm	Conjunction of Moon-Mars (2.6° apart)
	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”)
	25	12:07 pm	First Quarter (Waxing Half) Moon
	28	7:45 pm - 8:15 pm	Mercury near Regulus (0.3° apart)
	30	9 pm - 5 am	Delta Aquariid Meteor Shower peak
	31	3:42 pm	Perigean Spring (King) Tides (2.67 ft) — Honolulu Harbor
Aug	1	8:31 am	Full Moon <b>Super Full Moon: largest/brightest full moon that occurs nearest perigee</b>
	1	4:24 pm	Perigean Spring (King) Tides (2.67 ft) — Honolulu Harbor
	1	7:52 pm	Moon at perigee (closest to earth)

	3	2:15 am - 5:45 am	Conjunction of Moon-Saturn (2.5° apart)
	4	7:10 pm	Mercury at highest altitude in evening sky (18°)
	8	12:15 am - 5:45 am	Conjunction of Moon-Jupiter (2.7° apart)
	8	12:28 am	Last Quarter (Waning Half) Moon
	9	1:00 am - 5:45 am	Conjunction of Moon-Pleiades (1.7° apart)
	12	10 pm - 5 am	Perseid Meteor Shower peak
	15	11:38 pm	New Moon <b>Micro New Moon: smallest new moon that occurs nearest apogee</b>
	16	1:55 pm	Moon at apogee (farthest from earth)
	18	7:15 pm - 8:30 pm	Conjunction of Moon-Mars (1.7° apart)
	23	11:57 pm	First Quarter (Waxing Half) Moon
	30	5:51 am	Moon at perigee (closest to earth)
	30	3:35 pm	Full Moon <b>Super Full Moon: largest/brightest full moon that occurs nearest perigee</b> <b>Blue Moon:</b> <b>second Full Moon in same calendar month.</b>
Sep	4	10:45 pm - 6:00 am	Conjunction of Moon-Jupiter (4.9° apart)
	6	12:21 pm	Last Quarter (Waning Half) Moon
	12	5:42 am	Moon at apogee (farthest from earth)
	14	3:40 pm	New Moon
	18	6:00 am	Venus at its brightest in morning (mag -4.5)
	22	9:32 am	First Quarter (Waxing Half) Moon
	22	8:50 pm	Autumnal Equinox (first day of fall)
	23	6:15 am	Mercury at highest altitude in morning sky (17°)
	26	6:45 pm - 3:15 am	Conjunction of Moon-Saturn (3.5° apart)
	27	3:05 pm	Moon at perigee (closest to earth)
	28	11:57 pm	Full Moon
	30	sunrise 6:21:09 am sunset 6:21:18 pm	Fall Equilux (equilux: equal day & night—12 hrs of daylight & 12 hrs of nighttime)
Oct	1	9:00 pm - 6:00 am	Conjunction of Moon-Jupiter (4.8° apart)
	6	3:48 am	Last Quarter (Waning Half) Moon
	9	5:41 pm	Moon at apogee (farthest from earth)

	9	7 pm - 1 am	Draconid Meteor Shower peak
	10	7 pm – 6 am	South Taurid Meteor Shower peak
	14	6:27 am - 6:39 am	<b>PARTIAL SOLAR ECLIPSE</b> <b>sunrise: 6:25:06 am</b> <b>first visible: 6:27:00 am</b> <b>max: 6:29:03 am</b> <b>ends: 6:38:45 am</b>  <b>[Note: Annular Solar Eclipse elsewhere]</b>
	14	7:55 am	New Moon
	21	5:29 pm	First Quarter (Waxing Half) Moon
	22	11:30 pm - 6:00 am	Orionid Meteor Shower peak
	23	6:15 pm - 1:30 am	Conjunction of Moon-Saturn (4.5° apart)
	24	6:30 am	Venus at highest point in morning sky (46° altitude)
	25	4:53 pm	Moon at perigee (closest to earth)
	28	10:24 pm	Full Moon
	28	7:00 pm - 6:15 am	Conjunction of Moon-Jupiter (2.2° apart)
	30	4:15 am	Conjunction of Moon-Pleiades (1.5° apart)
Nov	3	12:14:25 pm	Earliest “noon”—earliest time sun crosses the meridian in Honolulu (earliest apparent noon)
	4	10:37 pm	Last Quarter (Waning Half) Moon
	5	2:00 am	Daylight Saving Time ends on mainland [Hawaii does not observe DST]
	6	11:49 am	Moon at apogee (farthest from earth)
	9	3:15 am - 6:15 am	Conjunction of Moon-Venus (2.7 apart)
	12	6:30 pm - 6:00 am	North Taurid Meteor Shower peak
	12	11:27 pm	New Moon
	17	5:49 pm	<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)
	18	12 mid - 6:00 am	Leonid Meteor Shower peak
	20	12:50 am	First Quarter (Waxing Half) Moon
	21	11:03 am	Moon at perigee (closest to earth)
	24	6:00 pm - 4:15 am	Conjunction of Moon-Jupiter (3.2° apart)

	26	5:48:53 pm	Earliest sunset ever occurs in Honolulu
	26	11:16 pm	Full Moon
Dec	4	8:42 am	Moon at apogee (farthest from earth)
	4	7:49 pm	Last Quarter (Waning Half) Moon
	7	6:00 pm	Mercury at highest point in evening sky (16° altitude)
	9	4:15 am - 6:30 am	Conjunction of Moon-Venus (3.5° apart)
	12	1:32 pm	New Moon
	13	<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)
	14	8 pm – 6 am	Geminid Meteor Shower peak
	16	8:53 am	Moon at perigee (closest to earth)
	17	6:15 pm – 10:45 pm	Conjunction of Moon-Saturn (3.4° apart)
	19	8:39 am	First Quarter (Waxing Half) Moon
	21	5:28 pm	Winter Solstice (first day of winter) Honolulu sunrise 7:02:41 am; sunset 5:55:21 pm Shortest Day: 10h 52m 40s
	21	6:15 pm – 2:15 am	Conjunction Moon-Jupiter (4.8° apart)
	23	7 pm – 6 am	Ursid Meteor Shower peak
	23	6:30 pm – 4:15 am	Conjunction of Moon-Pleiades (0.9° apart)
	26	2:33 pm	Full Moon