Events featuring the natural satellites of Jupiter, January 2026

The satellites (also known as Galilean satellites in honor of the first person to observe them) of Jupiter provide some of the most striking phenomena observable with basic instrumentation. With a good pair of binoculars mounted on a tripod or a small telescope, we may be able to observe eclipses, occultations and transits of the Galilean satellites or their shadows over Jupiter. Similarly, telescopic observation of Jupiter's Great Red Spot (GRS) allows us to enjoy one of the largest storms in the entire Solar System. The following table summarizes all the events featuring Jupiter's satellites and observable from Granada.

- Column 1: Day of the month
- Column 2: Time in Coordinated Universal Time (to transform to local time add one hour in winter time and two in summer time)
- Column 3: Jupiter's altitude above the horizon
- Column 4: Main object: GMR, Great Red Spot; Gan, Ganymede; Cal, Callisto; Io, Io; Eur: Europa.
- Column 5: Event

For those unfamiliar with astronomical language, here we indicate what each of the phenomena tabulated below consists of:

- Transit: This occurs when one of Jupiter's satellites is between us and the planet, i.e. it is (in projection) over Jupiter's disk.

- Transit of the shadow: Based on the previous definition, you can get an idea of what I'm referring to here. Both Jupiter and its satellites are illuminated by the Sun and they all project a shadow in turn. This shadow, if projected by a satellite, can be lost in space or can fall on Jupiter's surface. If this is the case, we will be able to see a dark spot moving across the surface of the planet. For an observer located on Jupiter's surface, it would be a solar eclipse.

- Occultation: If the shadow, instead of being projected by the satellite onto Jupiter's surface, is projected by Jupiter onto the satellite, an eclipse will occur. What we can observe is that a given satellite goes from being visible to not being visible, because it is in the shadow projected by Jupiter and therefore does not receive any light to reflect and be visible. It would be the equivalent phenomenon to a lunar eclipse on Earth.

- Regarding the Great Red Spot (GRS), what we tabulate in this table is the moment when it passes through the central meridian, i.e. when the spot is in front of us.

Day	Time (UT)	Altitude (^{o})	Objet	Event
(1)	(2)	(3)	(4)	(5)
01	01:16	75.2	GRS	crosses central meridian
01	03:02	67.7	Eur	Shadow transit begins
01	03:30	62.7	Eur	Transit begins
01	05:52	34.6	Eur	Shadow transit ends
01	06:21	28.8	Eur	Transit ends
01	19:17	9.5	Io	Occultation ends
01	21:07	30.9	GRS	crosses central meridian
01	21:15	32.6	Cal	Eclipse begins
02	03:10	65.6	Cal	Occultation ends
02	07:03	19.9	GRS	crosses central meridian
02	21:13	32.9	Eur	Eclipse begins
03	00:26	70.0	Eur	Occultation ends
03	02:54	67.7	GRS	crosses central meridian
03	22:45	52.1	GRS	crosses central meridian
04	18:36	4.2	GRS	crosses central meridian
04	19:11	10.6	Eur	Shadow transit ends
04	19:29	13.9	Eur	Transit ends
05	04:32	47.6	GRS	crosses central meridian
05	05:44	33.2	Io	Eclipse begins
05	08:09	5.1	Io	Occultation ends
06	00:23	71.3	GRS	crosses central meridian
06	02:52	66.0	Io	Shadow transit begins
06	02:59	64.8	Io	Transit begins
06	05:08	39.5	Io	Shadow transit ends
06	05:15	38.2	Io	Transit ends
06	20:14	24.3	GRS	crosses central meridian
07	00:13	70.4	Io	Eclipse begins
07	02:35	68.3	Io	Occultation ends
07	03:02	63.4	Gan	Shadow transit begins
07	03:22	59.8	Gan	Transit begins
07	06:10	26.4	GRS	crosses central meridian
07	06:19	24.6	Gan	Shadow transit ends
07	06:39	20.6	Gan	Transit ends
07	21:20	38.3	Io	Shadow transit begins
07	21:24	39.0	Io	Transit begins
07	23:37	65.1	Io	Shadow transit ends
07	23:41	65.8	Io	Transit ends
08	02:01	72.8	GRS	crosses central meridian
08	05:38	32.0	Eur	Shadow transit begins
08	05:44	30.7	Eur	Transit begins
08	18:41	7.9	Io	Eclipse begins
08	21:00	35.1	Io	Occultation ends
08	21:52	45.4	GRS	crosses central meridian
09	07:48	6.1	GRS	crosses central meridian
09	23:48	68.3	Eur	Eclipse begins

continues in next page

comes from previous page

Day	Time (TU)	Altitude (^{o})	Objet	Event
(1)	(2)	(3)	(4)	(5)
10	02:40	65.4	Eur	Occultation ends
10	03:39	54.2	GRS	crosses central meridian
10	20:14	27.3	Gan	Eclipse ends
10	23:30	65.9	GRS	crosses central meridian
11	18:52	12.1	Eur	Transit begins
11	18:56	13.0	Eur	Shadow transit begins
11	19:21	17.8	GRS	crosses central meridian
11	21:43	45.9	Eur	Transit ends
11	21:47	46.8	Eur	Shadow transit ends
12	05:17	33.0	GRS	crosses central meridian
12	07:35	6.3	Io	Occultation begins
13	01:08	75.9	GRS	crosses central meridian
13	04:42	39.2	Io	Transit begins
13	04:46	38.4	Io	Shadow transit begins
13	06:58	12.4	Io	Transit ends
13	07:03	11.6	Io	Shadow transit ends
13	20:59	38.8	GRS	crosses central meridian
14	02:01	69.3	Io	Occultation begins
14	04:23	42.3	Io	Eclipse ends
14	06:37	15.7	Gan	Transit begins
14	06:55	12.3	GRS	crosses central meridian
14	07:02	11.0	Gan	Shadow transit begins
14	23:08	64.7	Io	Transit begins
14	23:15	65.9	Io	Shadow transit begins
15	01:25	73.8	Io	Transit ends
15	01:32	73.0	Io	Shadow transit ends
15	02:46	60.6	GRS	crosses central meridian
15	20:27	34.0	Io	Occultation begins
15	22:37	59.7	GRS	crosses central meridian
15	22:52	62.6	Io	Eclipse ends
16	19:51	27.5	Io	Transit ends
16	19:59	29.0	Io	Shadow transit ends
17	02:03	67.0	Eur	Occultation begins
17	04:24	39.7	GRS	crosses central meridian
17	05:14	29.7	Eur	Eclipse ends
17	20:09	31.8	Gan	Occultation begins
18	00:14	75.5	Gan	Eclipse ends
18	00:15	75.6	GRS	crosses central meridian
18	19:13	21.6	Cal	Eclipse ends
18	20:06	32.1	GRS	crosses central meridian
18	21:06	44.1	Eur	Transit begins
18	21:33	49.4	Eur	Shadow transit begins
18	23:57	74.5	Eur	Transit ends
19	00:23	76.1	Eur	Shadow transit ends
19	06:02	18.7	GRS	crosses central meridian

continues in next page

comes from previous page

Day	Time (TU)	Altitude (^{o})	Objet	Event
(1)	(2)	(3)	(4)	(5)
20	01:53	66.7	GRS	crosses central meridian
20	06:26	13.3	Io	Transit begins
20	06:40	10.6	Io	Shadow transit begins
20	21:44	53.3	GRS	crosses central meridian
21	03:45	44.4	Io	Occultation begins
21	06:18	14.1	Io	Eclipse ends
22	00:51	74.5	Io	Transit begins
22	01:09	72.4	Io	Shadow transit begins
22	03:09	50.9	Io	Transit ends
22	03:27	47.3	Io	Shadow transit ends
22	03:31	46.4	GRS	crosses central meridian
22	22:11	60.1	Io	Occultation begins
22	23:22	72.2	GRS	crosses central meridian
23	00:47	74.5	Io	Eclipse ends
23	19:14	25.5	GRS	crosses central meridian
23	19:17	26.3	Io	Transit begins
23	19:38	30.4	Io	Shadow transit begins
23	21:35	53.7	Io	Transit ends
23	21:54	57.4	Io	Shadow transit ends
24	04:17	35.5	Eur	Occultation begins
24	05:09	25.2	GRS	crosses central meridian
24	19:16	26.9	Io	Eclipse ends
24	23:25	73.5	Gan	Occultation begins
25	01:00	72.0	GRS	crosses central meridian
25	04:14	35.5	Gan	Eclipse ends
25	20:52	46.7	GRS	crosses central meridian
25	23:21	73.6	Eur	Transit begins
26	00:08	76.1	Eur	Shadow transit begins
26	02:12	58.9	Eur	Transit ends
26	03:00	49.5	Eur	Shadow transit ends
26	06:47	5.0	GRS	crosses central meridian
26	22:13	63.4	Cal	Transit begins
27	02:07	59.0	Cal	Shadow transit begins
27	02:08	58.9	Cal	Transit ends
27	02:38	53.0	GRS	crosses central meridian
27	06:07	11.8	Cal	Shadow transit ends
27	21:08	51.6	Eur	Eclipse ends
27	22:30	67.0	GRS	crosses central meridian
28	05:29	18.1	Io	Occultation begins
29	02:36	51.9	Io	Transit begins
29	03:04	46.2	Io	Shadow transit begins
29	04:16	31.7	GRS	crosses central meridian
29	04:53	24.5	Io	Transit ends
29	05:19	19.4	Io	Shadow transit ends
29	23:56	76.1	Io	Occultation begins

continues in next page

comes from previous page

Day	Time (TU)	Altitude (^{o})	Objet	Event
(1)	(2)	(3)	(4)	(5)
30	00:08	75.5	GRS	crosses central meridian
30	02:42	49.9	Io	Eclipse ends
30	19:59	40.1	GRS	crosses central meridian
30	21:02	52.7	Io	Transit begins
30	21:32	58.6	Io	Shadow transit begins
30	23:19	75.3	Io	Transit ends
30	23:49	76.1	Io	Shadow transit ends
31	05:55	11.1	GRS	crosses central meridian
31	06:33	4.0	Eur	Occultation begins
31	21:11	55.3	Io	Eclipse ends

Table 1: Phenomena Featuring Jupiter's Satellites and the Great Red Spot (GRS)