



Human Performance Attachment

Astronomical Data

Biloxi, MS

HWY17MH010

(21 pages)

Sun and Moon Data for One Day

U.S. Naval Observatory Astronomical Applications Department

Biloxi Crash (Longitude W88° 53', Latitude N30° 23')

Tuesday, March 7, 2017

Universal Time - 6h

Sun	
Begin civil twilight	05:51
Sunrise	06:15
Sun transit	12:06
Sunset	17:59
End civil twilight	18:23
Moon	
Moonset	02:28
Moonrise	13:23
Moon transit	20:23
Moonset	03:22 on following day

Closest Primary Moon Phase: First Quarter on March 5, 2017 at 05:32

Phase of the Moon on March 7, 2017: Waxing Gibbous with 75% of the Moon's visible disk illuminated.



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

BILOXI CRASH

° ' ° '
 W 88 53, N30 23

Altitude and Azimuth of the Sun
 Mar 7, 2017

Zone: 6h West of Greenwich

	Altitude	Azimuth
		(E of N)
h m	°	°
05:23	-12.0	88.9
05:24	-11.7	89.1
05:25	-11.5	89.2
05:26	-11.3	89.3
05:27	-11.1	89.4
05:28	-10.9	89.6
05:29	-10.7	89.7
05:30	-10.4	89.8
05:31	-10.2	89.9
05:32	-10.0	90.1
05:33	-9.8	90.2
05:34	-9.6	90.3
05:35	-9.4	90.4
05:36	-9.1	90.6
05:37	-8.9	90.7
05:38	-8.7	90.8
05:39	-8.5	90.9
05:40	-8.3	91.1
05:41	-8.1	91.2
05:42	-7.9	91.3
05:43	-7.6	91.5
05:44	-7.4	91.6
05:45	-7.2	91.7
05:46	-7.0	91.8
05:47	-6.8	92.0
05:48	-6.6	92.1
05:49	-6.3	92.2
05:50	-6.1	92.3
05:51	-5.9	92.5
05:52	-5.7	92.6
05:53	-5.5	92.7
05:54	-5.3	92.8
05:55	-5.0	93.0
05:56	-4.8	93.1
05:57	-4.6	93.2
05:58	-4.4	93.3
05:59	-4.2	93.5
06:00	-4.0	93.6
06:01	-3.8	93.7
06:02	-3.5	93.8

06:03	-3.3	94.0
06:04	-3.1	94.1
06:05	-2.9	94.2
06:06	-2.7	94.3
06:07	-2.5	94.5
06:08	-2.2	94.6
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06:11	-1.6	95.0
06:12	-1.4	95.1
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06:30	2.7	97.4
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06:32	3.1	97.6
06:33	3.3	97.7
06:34	3.5	97.9
06:35	3.7	98.0
06:36	4.0	98.1
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12:59	52.5	201.8
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13:02	52.2	203.0

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15:02	35.2	237.7

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15:20	31.8	241.2
15:21	31.6	241.4
15:22	31.5	241.6
15:23	31.3	241.8
15:24	31.1	242.0
15:25	30.9	242.2
15:26	30.7	242.4
15:27	30.5	242.6
15:28	30.3	242.7
15:29	30.1	242.9
15:30	29.9	243.1
15:31	29.7	243.3
15:32	29.5	243.5
15:33	29.3	243.7
15:34	29.2	243.8
15:35	29.0	244.0
15:36	28.8	244.2
15:37	28.6	244.4
15:38	28.4	244.6
15:39	28.2	244.7
15:40	28.0	244.9
15:41	27.8	245.1
15:42	27.6	245.3
15:43	27.4	245.4
15:44	27.2	245.6
15:45	27.0	245.8
15:46	26.8	245.9
15:47	26.6	246.1
15:48	26.4	246.3
15:49	26.2	246.5
15:50	26.0	246.6
15:51	25.8	246.8
15:52	25.6	247.0
15:53	25.4	247.1
15:54	25.2	247.3
15:55	25.0	247.5
15:56	24.8	247.6
15:57	24.6	247.8
15:58	24.4	248.0
15:59	24.2	248.1
16:00	24.0	248.3
16:01	23.8	248.4
16:02	23.6	248.6

16:03	23.4	248.8
16:04	23.2	248.9
16:05	23.0	249.1
16:06	22.8	249.2
16:07	22.6	249.4
16:08	22.4	249.6
16:09	22.2	249.7
16:10	22.0	249.9
16:11	21.8	250.0
16:12	21.6	250.2
16:13	21.4	250.3
16:14	21.2	250.5
16:15	21.0	250.6
16:16	20.8	250.8
16:17	20.6	251.0
16:18	20.4	251.1
16:19	20.2	251.3
16:20	20.0	251.4
16:21	19.8	251.6
16:22	19.6	251.7
16:23	19.4	251.9
16:24	19.2	252.0
16:25	19.0	252.2
16:26	18.8	252.3
16:27	18.6	252.5
16:28	18.4	252.6
16:29	18.2	252.8
16:30	18.0	252.9
16:31	17.8	253.1
16:32	17.5	253.2
16:33	17.3	253.3
16:34	17.1	253.5
16:35	16.9	253.6
16:36	16.7	253.8
16:37	16.5	253.9
16:38	16.3	254.1
16:39	16.1	254.2
16:40	15.9	254.4
16:41	15.7	254.5
16:42	15.5	254.6
16:43	15.3	254.8
16:44	15.1	254.9
16:45	14.9	255.1
16:46	14.7	255.2
16:47	14.4	255.4
16:48	14.2	255.5
16:49	14.0	255.6
16:50	13.8	255.8
16:51	13.6	255.9
16:52	13.4	256.0
16:53	13.2	256.2
16:54	13.0	256.3
16:55	12.8	256.5
16:56	12.6	256.6
16:57	12.4	256.7
16:58	12.2	256.9
16:59	11.9	257.0
17:00	11.7	257.2
17:01	11.5	257.3
17:02	11.3	257.4

17:03	11.1	257.6
17:04	10.9	257.7
17:05	10.7	257.8
17:06	10.5	258.0
17:07	10.3	258.1
17:08	10.1	258.2
17:09	9.9	258.4
17:10	9.6	258.5
17:11	9.4	258.6
17:12	9.2	258.8
17:13	9.0	258.9
17:14	8.8	259.0
17:15	8.6	259.2
17:16	8.4	259.3
17:17	8.2	259.4
17:18	8.0	259.6
17:19	7.8	259.7
17:20	7.6	259.8
17:21	7.3	260.0
17:22	7.1	260.1
17:23	6.9	260.2
17:24	6.7	260.4
17:25	6.5	260.5
17:26	6.3	260.6
17:27	6.1	260.7
17:28	5.9	260.9
17:29	5.7	261.0
17:30	5.5	261.1
17:31	5.3	261.3
17:32	5.0	261.4
17:33	4.8	261.5
17:34	4.6	261.7
17:35	4.4	261.8
17:36	4.2	261.9
17:37	4.0	262.0
17:38	3.8	262.2
17:39	3.6	262.3
17:40	3.4	262.4
17:41	3.2	262.6
17:42	3.0	262.7
17:43	2.8	262.8
17:44	2.6	262.9
17:45	2.4	263.1
17:46	2.2	263.2
17:47	2.0	263.3
17:48	1.8	263.5
17:49	1.6	263.6
17:50	1.4	263.7
17:51	1.2	263.8
17:52	1.0	264.0
17:53	0.8	264.1
17:54	0.6	264.2
17:55	0.5	264.3
17:56	0.3	264.5
17:57	0.1	264.6
17:58	-0.1	264.7
17:59	-0.9	264.8
18:00	-1.1	265.0
18:01	-1.3	265.1
18:02	-1.5	265.2

18:03	-1.8	265.4
18:04	-2.0	265.5
18:05	-2.2	265.6
18:06	-2.4	265.7
18:07	-2.6	265.9
18:08	-2.8	266.0
18:09	-3.0	266.1
18:10	-3.3	266.2
18:11	-3.5	266.4
18:12	-3.7	266.5
18:13	-3.9	266.6
18:14	-4.1	266.7
18:15	-4.3	266.9
18:16	-4.5	267.0
18:17	-4.8	267.1
18:18	-5.0	267.2
18:19	-5.2	267.4
18:20	-5.4	267.5
18:21	-5.6	267.6
18:22	-5.8	267.7
18:23	-6.1	267.9
18:24	-6.3	268.0
18:25	-6.5	268.1
18:26	-6.7	268.2
18:27	-6.9	268.4
18:28	-7.1	268.5
18:29	-7.4	268.6
18:30	-7.6	268.7
18:31	-7.8	268.9
18:32	-8.0	269.0
18:33	-8.2	269.1
18:34	-8.4	269.3
18:35	-8.6	269.4
18:36	-8.9	269.5
18:37	-9.1	269.6
18:38	-9.3	269.8
18:39	-9.5	269.9
18:40	-9.7	270.0
18:41	-9.9	270.1
18:42	-10.2	270.3
18:43	-10.4	270.4
18:44	-10.6	270.5
18:45	-10.8	270.6
18:46	-11.0	270.8
18:47	-11.2	270.9
18:48	-11.4	271.0
18:49	-11.7	271.2
18:50	-11.9	271.3

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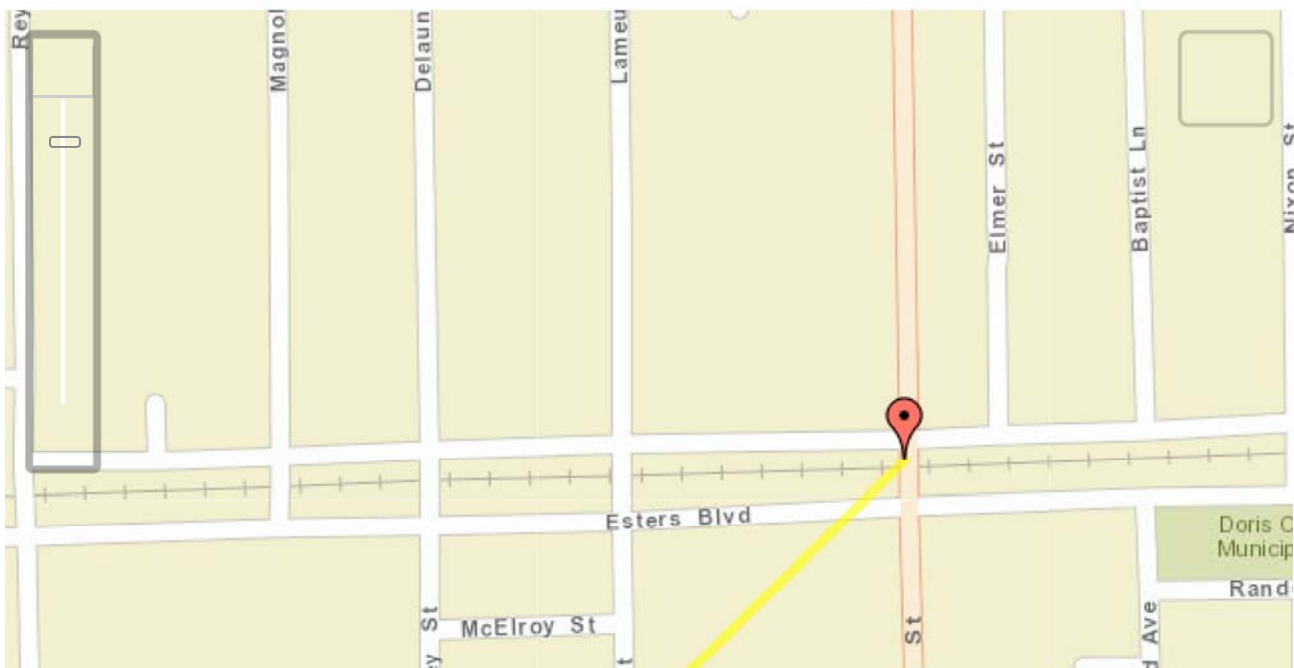
NOAA Solar Calculator

Find Sunrise, Sunset, Solar Noon and Solar Position for Any Place on Earth

Show:

- World Cities
- U.S. Cities
- GMD Observ.'s
- GMD Data Sites
- SurfRad

Click one of the small pins near (and in the same time zone as) your desired location. Use the control on the left side of the map to zoom in or out. Place the large pin in the exact desired location. You can use the Save button to have your computer remember the current location for next time. Check the DST check box if Daylight Saving Time is in effect for your site.



<https://developers.arcgis.com>Leaflet (<http://leafletjs.com>) | Esri, HERE, Garmin, INCREMENT P, NGA, USGS

Location:

Latitude: (glossary.html#latitude)

30.399122

Longitude: (glossary.html#longitude)

-88.885661

Time Zone: (timezone.html)

-6

 DST? (glossary.html#daylightsavingtime)

Save Location

Date:

Day:

7

**Month:**

Mar

**Year:**

2017

Local Time:

02

:

12

:

00



PM

Use Current Time

Result

Equation of Time (./glossary.html#equationoftime) (minutes):

-10.87

Solar Declination (./glossary.html#solardeclination) (in°):**Apparent Sunrise (./glossary.html#apparentsunrise) (hh:mm):** **Show Sunrise****Solar Noon (./glossary.html#solarnoon) (hh:mm:ss):****Apparent Sunset (./glossary.html#apparentsunrise) (hh:mm):** **Show Sunset****Az/EI (./glossary.html#azimuthelevation) (in °) at Local Time:** **Show Azimuth**

Having Trouble?

- Check your Time Zone -- Is the time zone set correctly for this location? Try clicking on one of the city pins near (and in the same time zone as) your location. Tick the boxes above the map to show different sets of pins.
- Daylight Saving Time? -- Our calculator does not automatically set Daylight Time, so tick the DST box if Daylight Time is in effect for your location on the day you have entered.
- Click the *Show* checkboxes under sunrise, sunset and azimuth/elevation to display color-coded lines on the map indicating the direction of sunrise, sunset and current solar position.
- This solar calculator is provided for research and entertainment purposes only. Due to variable atmospheric conditions and uncertainty inherent in the algorithms used, the actual observed values of sunrise, sunset and solar position may differ from the results presented here.
- Other Questions? -- Feel free to write to us with any questions or comments at Webmaster (mailto:webmaster.gmd@noaa.gov).

Solar Calculation Resources:

- NOAA Solar Calculator (./index.html)
- Old Sunrise Calculator (./sunrise.html)

- [Old Solar Pos Calculator \(/azel.html\)](#)
- [Solar Calculator Links \(/sollinks.html\)](#)
- [Solar Calculator Glossary \(/glossary.html\)](#)
- [Calculation Details \(/calcdetails.html\)](#)
- [Time Zone Table \(/timezone.html\)](#)

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