

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

RUTHTON, MINNESOTA

0 0  
W 96 06, N44 11

Altitude and Azimuth of the Sun  
Aug 19, 2016

Central Daylight Time

	Altitude	Azimuth (E of N)
h m	o	o
05:30	-11.1	60.0
05:40	-9.6	61.9
05:50	-8.0	63.8
06:00	-6.3	65.6
06:10	-4.7	67.4
06:20	-3.0	69.2
06:30	-1.4	71.0
06:40	0.8	72.7
06:50	2.3	74.5
07:00	4.0	76.2
07:10	5.7	77.9
07:20	7.4	79.6
07:30	9.2	81.3
07:40	10.9	83.0
07:50	12.7	84.7
08:00	14.5	86.4
08:10	16.3	88.1
08:20	18.0	89.9
08:30	19.8	91.6
08:40	21.6	93.4
08:50	23.4	95.2
09:00	25.2	97.0
09:10	26.9	98.9
09:20	28.7	100.8
09:30	30.5	102.8
09:40	32.2	104.8
09:50	33.9	106.8
10:00	35.6	109.0
10:10	37.3	111.2

10:20	39.0	113.4
10:30	40.6	115.8
10:40	42.2	118.3
10:50	43.7	120.8
11:00	45.3	123.5
11:10	46.7	126.3
11:20	48.1	129.3
11:30	49.5	132.3
11:40	50.8	135.6
11:50	52.0	139.0
12:00	53.1	142.5
12:10	54.2	146.2
12:20	55.1	150.1
12:30	55.9	154.2
12:40	56.7	158.4
12:50	57.3	162.7
13:00	57.7	167.2
13:10	58.0	171.8
13:20	58.2	176.4
13:30	58.3	181.0
13:40	58.2	185.6
13:50	57.9	190.2
14:00	57.5	194.7
14:10	57.0	199.2
14:20	56.3	203.4
14:30	55.6	207.6
14:40	54.7	211.5
14:50	53.7	215.4
15:00	52.6	219.0
15:10	51.4	222.5
15:20	50.2	225.8
15:30	48.9	229.0
15:40	47.5	232.0
15:50	46.0	234.9
16:00	44.5	237.6
16:10	43.0	240.2
16:20	41.4	242.8
16:30	39.8	245.2
16:40	38.2	247.5
16:50	36.5	249.7
17:00	34.8	251.9
17:10	33.1	254.0
17:20	31.4	256.0
17:30	29.6	258.0
17:40	27.9	259.9
17:50	26.1	261.8
18:00	24.3	263.7
18:10	22.5	265.5
18:20	20.7	267.3

18:30	19.0	269.0
18:40	17.2	270.8
18:50	15.4	272.5
19:00	13.6	274.2
19:10	11.8	275.9
19:20	10.0	277.6
19:30	8.3	279.3
19:40	6.5	281.0
19:50	4.8	282.7
20:00	3.1	284.4
20:10	1.5	286.2
20:20	0.0	287.9
20:30	-2.2	289.6
20:40	-3.9	291.4
20:50	-5.6	293.2
21:00	-7.2	295.0
21:10	-8.8	296.9
21:20	-10.4	298.8
21:30	-12.0	300.7

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