

**Climatic, Hydrological, and Topographic Services
CLIMATOLOGICAL AND ASTRONOMICAL SUMMARIES**

HISTORY. This pamphlet supersedes Fort Hood Pamphlet 115-4 dated 1 January 1995.

SUMMARY. This pamphlet provides the climatological and astronomical data, and guidance for use, for Fort Hood, Texas, and the surrounding area.

APPLICABILITY. This pamphlet applies to active Army and Air Force units assigned or attached to III Corps and Fort Hood.

CHANGES. Changes to this pamphlet are not official unless they are authenticated by the Directorate of Information Management (DOIM). Users will destroy changes on their expiration dates unless sooner superseded or rescinded.

SUGGESTED IMPROVEMENTS. The proponent of this pamphlet is the 3d Weather Squadron, 3d Air Support Group. Users are invited to send comments and suggested improvements to the Commander, III Corps and Fort Hood, ATTN: AFZF-GS-W, Fort Hood, Texas 76544-5000.

OVERVIEW

1

Purpose This pamphlet provides climatological and astronomical data applicable to the Fort Hood and the surrounding area.

1a

Forms FHT Handout 115-X1 Climatological Data for Robert Gray Army Airfield (RGAAF).

1b

Terms

BMNT	beginning morning nautical twilight
DOIM	Directorate of Information Management
EENT	ending evening nautical twilight
IFR	instrument flight rules
NVG	night vision goggle
NVS	night vision goggle system
RGAAF	Robert Gray Army Airfield
VFR	visual flight rules

1c

Scope This information is valid for the Fort Hood area for an indefinite period, and should be retained until superseded.

Due to the generalized nature of climatological information, it should be used for planning purposes only.

1d

APPENDICES

2

Appendix A Appendix A is a general survey of climatology relating to the Fort Hood and Central Texas area and includes

- location and topography,
- climatological classification,
- temperatures,
- precipitation,
- severe weather, and
- flying weather.

2a

Appendix B Appendix B is a seasonal climatological summary for Fort Hood.

2b

Appendix C Appendix C is a climatological data summary derived primarily from data for, RGAAF compiled from the year 1950 through the present time.

Data depicted is considered to be climatologically representative for the Fort Hood area, and is available as FHT Handout 115-X1 (Climatological Data for Robert Gray Army Airfield).

2c

Appendix D Appendix D contains solar, lunar, and night vision goggle systems (NVS) interval data.

The solar data may be used during any year of the 20th century for the vicinity of RGAAF with an error margin not to exceed 2 minutes, generally less than 1 minute.

Lunar and NVS interval data is valid only for the year specified with the same area and accuracy constraints; this data will be updated annually.

Times are local central time (daylight time adjustments have been included).

2d

Appendix A
GENERAL SURVEY OF FORT HOOD AND CENTRAL TEXAS CLIMATOLOGY

GENERAL

Summary This summary is based on actual observations taken at RGAAF from 1950 through the present.

Statistics, except extremes, are strictly averages, and should only be used as estimates of expected conditions.

Variations occur from year to year; however, long-term averages, or means, remain fairly constant and are considered to be of permanent value.

Revisions will be issued as required.

A1

Location and Topography Fort Hood is located in the heart of Central Texas, along the eastern edge of what is locally known as the "Hill Country."

- The terrain slopes downward to the south and east at a rate of 8 feet per mile, and upward to the north and west at 6 feet per mile.
- This slope is significant from a meteorological standpoint, as the terrain is steep enough to heat or cool the air by descent or ascent.
- Typically, winds from the southwest through the north produce little or no inclement weather, while the winds from the south through the southeast produce low ceilings and reduced visibility.
- The result associated with the wind patterns is the cooling and condensing of warm moist air from the Gulf of Mexico, 150 miles to the southeast, as it is lifted over the rising terrain.

A1a

Climatological Classification Central Texas and Fort Hood are on the boundary of two major climatic zones

- to the west, semi-arid steppe climate and
- to the east, a warm, temperate, rainy climate with hot summers.

A combination of these two regimes, the climate to this area can be classified as a warm, temperate, rainy climate with hot, dry summers.

A1b

Temperatures (Fahrenheit) The average annual temperature for the Fort Hood area is 67 degrees.

- Highest temperatures occur in July and August with average highs of 94 degrees; the highest temperature recorded is 109 degrees.
- Lowest temperatures occur in December, January, and February, with the average lows of around 40 degrees; the lowest temperature recorded is -1 degree.

A1c

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- Precipitation
- The average annual precipitation for Fort Hood is 31 inches.
 - Heaviest rainfalls occur in the spring and fall, with extensive light precipitation in the winter, and relative dry summers.
 - Rare, typically light snowfall is possible from November through February,

Ale

Severe Weather

Thunderstorm activity reaches maximum intensity and frequency in the spring, with thunderstorms common from April through September, and possible throughout the year.

Convective thunderstorms are likely to occur during the afternoon and early evening hours from late spring through early fall, and at any time with frontal systems and squall line formations.

Tornadoes do occur in Central Texas and may occur at any hour of the day or night, but are usually associated with severe thunderstorm outbreaks in late spring through early summer during the warmest hours of the day.

The threat of hurricanes or hurricane force winds reaching Central Texas is small; the severe thunderstorms, damaging winds, and torrential rains associated with a tropical storm are possible, but not likely.

A1f

Flying Weather

Flying weather is excellent from May through October, with visual flight rule (VFR) weather conditions observed over 90 percent of the time.

Flying weather is worst from November through February as low clouds, ceilings, and reduced visibility, typically occurring during morning hours, produce instrument flight rule (IFR) conditions 10 to 20 percent of the time, and below minimum conditions 2 to 5 percent of the time.

A1g

Appendix B
SEASONAL CLIMATOLOGICAL SUMMARY FOR FORT HOOD, TEXAS

SEASONS**B1**

- Winter The worst weather for flight and ground operations is observed during the winter months.
- Frontal passages are at a maximum during this period with a frequency of five to six per month, producing colder temperatures and gusty northwesterly to northerly winds.
 - Temperatures range from the low-40s to the low-60s, with extremes ranging from below 10 to near 90 degrees.
 - Almost 6 inches of precipitation falls mostly in the form of light rain and drizzle over extended periods; however, measurable amounts of snow and freezing precipitation also occur.
 - Thunderstorms during daylight hours are rare, about one per month, and are usually associated with strong frontal systems.
 - The worst flying weather conditions are posed by low cloud ceilings and reduced visibility associated with the southerly flow of warm moist air from the Gulf of Mexico.
 - These conditions result when a high-pressure system moves to the east 2 to 3 days after a frontal passage producing this southerly flow at the surface, or when a shallow cold air mass moves over the area with cold dry air and northerly winds at the surface and southerly winds aloft.
 - Cold, dry air with overrunning warm, moist air produces extended periods of low cloud ceilings and reduced visibility with fog, light rain, and drizzle.

B1a

- Spring General weather for operations is considerably improved as winter changes to spring.
- Frontal systems gradually recede northward, and by the end of spring, only two or three systems per month reach Central Texas.
 - A marked raise in average daily temperatures is observed as highs climb from the low-60s into the low-80s, and ranging from the low-40s into the low-60s (extremes range from the teens to the 100s).
 - Precipitation is at its heaviest, mostly in the form of showers and thunderstorms; it is often severe, associated with the formation of fast moving frontal systems and squall lines that often precede these fronts.
 - Gusty surface winds associated with these phenomena are a potential hazard and can induce extended periods of reduced visibility with blowing dust.
 - The low cloud ceilings that pose such a problem to flight operations in winter are still a factor; however, ceilings tend to be higher (above 1,000 feet) and dissipate earlier in the morning.
 - The major flight hazards are associated with the severe spring weather described herein.

B1b

Summer	<p>Operational weather is excellent during the summer months; fronts, low ceilings, and precipitation are rare.</p> <ul style="list-style-type: none"> • Temperatures continue to climb into the mid-90s for highs and mid-70s for lows, with extremes ranging from the low-50s to low-100s. • A warm, moist southerly flow from the gulf dominates, producing high humidity and isolated afternoon thunderstorms. • Severe thunderstorms, though not as common, continue through the summer. • In late summer, disturbances in the gulf, such as tropical storms and easterly waves, occasionally recurve into the western gulf and Texas coast, bringing widespread rain and cloudiness and the threat of severe weather. • During the summer, gulf stratus cloudiness seldom produces a ceiling below 1,000 feet this far north. • Beyond isolated afternoon convective showers and thunderstorms, flying weather is excellent.
Fall	<p>Weather for flight and ground operations begins a downward trend during the latter part of the fall as frontal passages increase.</p> <ul style="list-style-type: none"> • Gusty surface winds accompanying fast moving fronts are a common occurrence. • Temperatures drop from highs in the upper-80s to the upper-60s, and from lows in the upper-60s to the upper-40s. • Extremes range from the low-20s to the low-100s, and the first freeze can be expected in mid-November. • Convective thunderstorms, still present in September, give way to more persistent frontal rain and rain shower activity which, with occasional thunderstorms and squall line formations, account for the moderate precipitation. • Though less frequent and typically less severe than spring, fall thunderstorms can reach severe levels; the threat of typical storms continues through early November. • Flying weather degrades through the fall as low ceilings and reduced visibility increases with stratus and fog common during morning hours; however, VFR conditions still prevail more than 90 percent of the time.

B1d

Appendix C
CLIMATOLOGICAL DATA SUMMARY
Period of Record
OCTOBER 1950 - OCTOBER 1995
FOR ROBERT GRAY ARMY AIRFIELD (except as identified)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
TEMPERATURE													
Mean Monthly (F)	47	51	59	67	74	81	84	84	78	69	57	51	67
Mean Maximum (F)	57	61	69	77	83	90	94	94	88	79	67	60	77
Mean Minimum (F)	37	41	48	57	64	71	73	73	68	58	47	40	57
Extreme Maximum (F)	86	93	101	98	100	107	109	107	105	101	93	89	109
Extreme Minimum (F)	7	7	16	32	42	51	61	61	42	30	21	-1	-1
PRECIPITATION													
Mean Monthly Precipitation (inches)	1.4	2.3	2.0	3.1	4.3	3.2	1.7	2.5	3.0	3.4	2.2	1.6	30.7
Mean No. Days Precipitation (greater than 1 inch)	7	7	7	8	8	6	4	5	7	6	6	6	77
Mean Monthly Snowfall (Inches)	1	1	T	T	0	0	0	0	0	T	T	T	2
Mean No. of Thunderstorm Days	1	2	4	5	7	5	4	5	4	2	2	1	42
FLYING WEATHER													
% Ceilings 1500ft and/or Visibility at least 3 miles	80	81	86	87	89	95	98	98	92	89	84	80	88
% Ceilings Below 1000ft or Visibility Less Than 2 miles	16	13	9	8	6	3	1	1	5	8	12	15	8
% Ceilings Below 200ft or Visibility Less Than 1/2 Mile	4	2	1	1	T	T	T	T	T	1	3	3	1
WIND DATA													
Prevailing Wind Direction (Quadrant)	N	S	S	S	S	S	S	S	S	S	S	S	S
Mean Wind Speed (knots)	6	7	8	8	7	7	6	5	5	6	6	7	6
Prevailing Wind Direction % of the time	33.0	30.4	38.2	49.5	51.5	58.9	55.5	50.8	34.7	42.1	33.5	31.8	42.1
Peak Wind Speed (*Hood Army Airfield)	47	61*	53	60	81*	47	43	66	51	50	58	47	81

Appendix D
ASTRONOMICAL BRIEFS

ASTRONOMICAL DATA TABLES FOR FORT HOOD, TEXAS
Latitude 31 deg 4 min N Longitude 97 deg 50 min W SOLAR / LUNAR DATA
ALL TIMES ARE LOCAL TIME (GMT - 6 Hrs 0 Mins)
PERCENT ILLUMINATION IS GIVEN FOR 00 LST

JANUARY 1995

DAY	SUN	SUN	MOON	START	STOP	MOON	%				
	BMNT	BMCT	RISE	SET	EECT	EENT	RISE	NVG	NVG	SET	ILLUM
1	0633	0703	0730	1739	1806	1836	1449	1801	0121	0348	82
2	0633	0703	0730	1740	1807	1837	1532	1802	0212	0441	88
3	0634	0704	0731	1741	1808	1838	1618	1847	0302	0531	94
4	0634	0704	0731	1742	1809	1838	1707	1935	0351	0620	97
5	0634	0704	0731	1742	1809	1839	1757	2025	0437	0705	99
6	0634	0704	0731	1743	1810	1840	1848	2116	0520	0747	100
7	0634	0704	0731	1744	1811	1841	1941	2207	0601	0827	98
8	0635	0704	0731	1745	1812	1841	2034	2259	0639	0903	95
9	0635	0704	0731	1746	1812	1842	2127	2353	0710	0939	90
10	0635	0704	0731	1747	1813	1843	2222	****	0710	1013	84
11	0635	0705	0731	1747	1814	1844	2317	0049	0710	1048	76
12	0635	0704	0731	1748	1815	1844	****	0147	0710	1122	67
13	0635	0704	0731	1749	1815	1845	0014	0248	0710	1200	56
14	0635	0704	0731	1750	1816	1846	0113	0353	0710	1240	46
15	0635	0704	0731	1751	1817	1847	0214	0502	0709	1325	35
16	0635	0704	0731	1752	1818	1848	0317	0613	0700	1415	25
17	0635	0704	0730	1753	1819	1848	0421	****	****	1512	15
18	0634	0704	0730	1754	1820	1849	0524	****	****	1615	8
19	0634	0704	0730	1754	1820	1850	0623	****	****	1722	2
20	0634	0703	0730	1755	1821	1851	0718	****	****	1831	0
21	0634	0703	0729	1756	1822	1852	0807	****	****	1939	1
22	0634	0703	0729	1757	1823	1852	0853	****	****	2045	5
23	0633	0702	0729	1758	1824	1853	0934	****	****	2149	11
24	0633	0702	0728	1759	1825	1854	1013	1820	2024	2251	19
25	0633	0702	0728	1800	1825	1855	1052	1821	2124	2350	28
26	0632	0701	0727	1801	1826	1856	1129	1821	2221	****	38
27	0632	0701	0727	1802	1827	1857	1208	1822	2315	0047	48
28	0631	0700	0726	1803	1828	1857	1248	1823	****	0142	58
29	0631	0700	0726	1804	1829	1858	1331	1824	0008	0236	67
30	0631	0659	0725	1805	1830	1859	1416	1825	0058	0327	75
31	0630	0659	0725	1805	1831	1900	1503	1826	0147	0416	83

BMNT-Beginning Morning Nautical Twilight
EENT-Ending Evening Nautical Twilight
BMCT-Beginning Morning Civil Twilight
EECT-Ending Evening Civil Twilight

NVG-Night Vision Goggle

For NVG Lunar Alt > 30 deg, Solar Alt < -5 deg,
and Lunar Illum > 23 %

ASTRONOMICAL DATA TABLES FOR FORT HOOD, TEXAS

Latitude 31 deg 4 min N Longitude 97 deg 50 min W SOLAR / LUNAR DATA

ALL TIMES ARE LOCAL TIME (GMT - 6 Hrs 0 Mins)

PERCENT ILLUMINATION IS GIVEN FOR 00 LST

FEBRUARY 1996

DAY		SUN RISE	SUN SET	EECT	EENT	MOON RISE	START NVG	STOP NVG	MOON SET	% ILLUM
	BMNT	BMCT								
1	0630	0658	0724	1806	1831	1901	1552	1827	0234	0502 89
2	0629	0658	0723	1807	1832	1902	1643	1911	0318	0545 94
3	0629	0657	0723	1808	1833	1902	1736	2002	0400	0626 98
4	0628	0657	0722	1809	1834	1903	1829	2055	0440	0704 100
5	0627	0656	0721	1810	1835	1904	1923	2148	0517	0741 100
6	0627	0655	0721	1811	1836	1905	2017	2244	0552	0816 98
7	0626	0655	0720	1811	1836	1905	2113	2341	0625	0850 94
8	0625	0654	0719	1812	1837	1906	2209	****	0658	0925 88
9	0625	0653	0718	1813	1838	1907	2306	0041	0658	1001 81
10	0624	0652	0718	1814	1839	1908	****	0144	0657	1040 72
11	0623	0652	0717	1815	1840	1909	0005	0249	0656	1122 62
12	0622	0651	0716	1816	1841	1909	0106	0356	0656	1208 51
13	0622	0650	0715	1817	1841	1910	0207	0504	0655	1300 40
14	0621	0649	0714	1817	1842	1911	0308	****	****	1358 29
15	0620	0648	0713	1818	1843	1912	0407	****	****	1501 19
16	0619	0647	0712	1819	1844	1912	0502	****	****	1607 10
17	0618	0647	0711	1820	1845	1913	0554	****	****	1714 4
18	0617	0646	0710	1821	1845	1914	0641	****	****	1822 1
19	0616	0645	0709	1821	1846	1914	0724	****	****	1928 0
20	0615	0644	0708	1822	1847	1915	0805	****	****	2032 2
21	0615	0643	0707	1823	1848	1916	0845	****	****	2134 7
22	0614	0642	0706	1824	1848	1917	0924	****	****	2233 14
23	0613	0641	0705	1825	1849	1917	1004	1844	2105	2331 22
24	0612	0640	0704	1825	1850	1918	1045	1845	2159	**** 31
25	0611	0639	0703	1826	1851	1919	1127	1846	2251	0027 40
26	0610	0638	0702	1827	1851	1920	1212	1847	2341	0120 50
27	0608	0637	0701	1828	1852	1920	1258	1847	****	0210 60
28	0607	0636	0700	1828	1853	1921	1347	1848	0029	0257 68
29	0606	0634	0659	1829	1854	1922	1437	1849	0114	0342 77

BMNT-Beginning Morning Nautical Twilight EENT-Ending Evening Nautical Twilight

BMCT-Beginning Morning Civil Twilight EECT-Ending Evening Civil Twilight

NVG-Night Vision Goggle

For NVG Lunar Alt > 30 deg, Solar Alt < -5 deg, and Lunar Illum > 23 %

ASTRONOMICAL DATA TABLES FOR FORT HOOD, TEXAS
Latitude 31 deg 4 min N Longitude 97 deg 50 min W SOLAR / LUNAR DATA
ALL TIMES ARE LOCAL TIME (GMT - 6 Hrs 0 Mins)
PERCENT ILLUMINATION IS GIVEN FOR 00 LST

MARCH 1996

DAY	BMNT	BMCT	SUN RISE	SUN SET	EECT	EENT	MOON RISE	START NVG	STOP NVG	MOON SET	% ILLUM
1	0605	0633	0658	1830	1854	1922	1529	1850	0157	0424	84
2	0604	0632	0656	1831	1855	1923	1622	1850	0238	0502	90
3	0603	0631	0655	1831	1856	1924	1716	1941	0316	0540	95
4	0602	0630	0654	1832	1856	1925	1811	2037	0352	0616	98
5	0601	0629	0653	1833	1857	1925	1906	2134	0426	0651	100
6	0600	0628	0652	1834	1858	1926	2003	2234	0500	0726	99
7	0558	0626	0651	1834	1858	1927	2101	2337	0532	0802	97
8	0557	0625	0649	1835	1859	1927	2159	****	0605	0841	92
9	0556	0624	0648	1836	1900	1928	2259	0042	0629	0922	85
10	0555	0623	0647	1836	1901	1929	****	0149	0628	1007	76
11	0554	0622	0646	1837	1901	1929	0000	0255	0626	1057	66
12	0552	0620	0645	1838	1902	1930	0100	0358	0625	1151	55
13	0551	0619	0643	1838	1903	1931	0158	0456	0624	1250	44
14	0550	0618	0642	1839	1903	1931	0253	0548	0623	1352	33
15	0549	0617	0641	1840	1904	1932	0344	****	****	1457	22
16	0547	0616	0640	1840	1905	1933	0432	****	****	1603	13
17	0546	0614	0638	1841	1905	1933	0516	****	****	1708	6
18	0545	0613	0637	1842	1906	1934	0557	****	****	1812	2
19	0544	0612	0636	1842	1907	1935	0638	****	****	1915	0
20	0542	0611	0635	1843	1907	1936	0717	****	****	2016	1
21	0541	0609	0633	1844	1908	1936	0757	****	****	2116	4
22	0540	0608	0632	1844	1909	1937	0838	****	****	2213	9
23	0538	0607	0631	1845	1909	1938	0920	****	****	2309	16
24	0537	0605	0630	1846	1910	1938	1005	1905	2132	****	24
25	0536	0604	0628	1846	1911	1939	1051	1906	2222	0001	33
26	0534	0603	0627	1847	1911	1940	1139	1907	2308	0050	42
27	0533	0602	0626	1848	1912	1940	1229	1907	2352	0136	52
28	0532	0600	0625	1848	1913	1941	1321	1908	****	0219	61
29	0531	0559	0623	1849	1913	1942	1413	1909	0034	0259	70
30	0529	0558	0622	1850	1914	1943	1506	1909	0113	0337	78
31	0528	0557	0621	1850	1915	1943	1601	1910	0150	0413	86

BMNT-Beginning Morning Nautical Twilight EENT-Ending Evening Nautical Twilight

BMCT-Beginning Morning Civil Twilight EECT-Ending Evening Civil Twilight

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For NVG Lunar Alt > 30 deg, Solar Alt < -5 deg, and Lunar Illum > 23 %

ASTRONOMICAL DATA TABLES FOR FORT HOOD, TEXAS

Latitude 31 deg 4 min N Longitude 97 deg 50 min W SOLAR / LUNAR DATA

ALL TIMES ARE LOCAL TIME (GMT - 6 Hrs 0 Mins)

PERCENT ILLUMINATION IS GIVEN FOR 00 LST

APRIL 1996

DAY	SUN RISE	SUN SET	EECT	EENT	MOON RISE	START NVG	STOP NVG	MOON SET	% ILLUM
	BMNT	BMCT							
1	0527	0555	0620	1851	1915	1944	1655	1923	0225
2	0525	0554	0618	1852	1916	1945	1752	2022	0259
3	0524	0553	0617	1852	1917	1945	1850	2125	0332
4	0523	0551	0616	1853	1917	1946	1950	2231	0405
5	0521	0550	0615	1853	1918	1947	2051	2339	0440
6	0520	0549	0613	1854	1919	1948	2153	*****	0517
7	0519	0548	0612	1855	1919	1948	2254	0047	0552
8	0517	0546	0611	1855	1920	1949	2354	0153	0551
9	0516	0545	0610	1856	1921	1950	****	0253	0550
10	0515	0544	0609	1857	1922	1951	0049	0346	0549
11	0514	0543	0608	1857	1922	1951	0141	0431	0548
12	0512	0541	0606	1858	1923	1952	0228	****	1352
13	0511	0540	0605	1859	1924	1953	0312	****	1455
14	0510	0539	0604	1859	1924	1954	0354	****	1558
15	0509	0538	0603	1900	1925	1954	0433	****	1700
16	0507	0537	0602	1901	1926	1955	0512	****	1801
17	0506	0536	0601	1901	1927	1956	0551	****	1901
18	0505	0534	0600	1902	1927	1957	0631	****	1959
19	0504	0533	0558	1903	1928	1957	0713	****	2056
20	0503	0532	0557	1903	1929	1958	0757	****	2150
21	0501	0531	0556	1904	1929	1959	0843	****	2242
22	0500	0530	0555	1905	1930	2000	0931	1925	2101
23	0459	0529	0554	1905	1931	2001	1021	1926	2147
24	0458	0528	0553	1906	1932	2001	1112	1927	2229
25	0457	0527	0552	1907	1932	2002	1203	1927	2309
26	0455	0525	0551	1907	1933	2003	1256	1928	2346
27	0454	0524	0550	1908	1934	2004	1349	1929	****
28	0453	0523	0549	1909	1935	2005	1443	1930	0022
29	0452	0522	0548	1909	1935	2006	1539	1930	0056
30	0451	0521	0547	1910	1936	2007	1636	1931	0129

BMNT-Beginning Morning Nautical Twilight

EENT-Ending Evening Nautical Twilight

BMCT-Beginning Morning Civil Twilight

EECT-Ending Evening Civil Twilight

NVG-Night Vision Goggle

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Latitude 31 deg 4 min N Longitude 97 deg 50 min W SOLAR / LUNAR DATA
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PERCENT ILLUMINATION IS GIVEN FOR 00 LST

MAY 1996

DAY	BMNT	BMCT	SUN RISE	SUNSET	EECT	EENT	MOON RISE	START NVG	STOP NVG	MOON SET	% ILLUM
1	0450	0520	0546	1911	1937	2007	1736	2013	0202	0433	94
2	0449	0519	0545	1912	1937	2008	1837	2122	0236	0513	98
3	0448	0519	0544	1912	1938	2009	1940	2232	0313	0557	100
4	0447	0518	0543	1913	1939	2010	2044	2341	0354	0645	99
5	0445	0517	0543	1914	1940	2011	2146	****	0440	0738	96
6	0444	0516	0542	1914	1940	2012	2244	0046	0521	0836	90
7	0443	0515	0541	1915	1941	2013	2338	0143	0520	0938	82
8	0443	0514	0540	1916	1942	2013	****	0231	0519	1042	72
9	0442	0513	0539	1916	1943	2014	0028	0312	0518	1146	61
10	0441	0512	0539	1917	1943	2015	0112	0350	0518	1249	50
11	0440	0512	0538	1918	1944	2016	0154	0426	0517	1351	38
12	0439	0511	0537	1918	1945	2017	0233	0500	0516	1452	28
13	0438	0510	0536	1919	1946	2018	0311	****	****	1552	18
14	0437	0509	0536	1920	1946	2019	0349	****	****	1651	11
15	0436	0509	0535	1921	1947	2019	0428	****	****	1749	5
16	0436	0508	0534	1921	1948	2020	0509	****	****	1846	2
17	0435	0507	0534	1922	1948	2021	0551	****	****	1941	0
18	0434	0507	0533	1923	1949	2022	0636	****	****	2034	1
19	0433	0506	0533	1923	1950	2023	0723	****	****	2123	3
20	0433	0506	0532	1924	1950	2023	0813	****	****	2209	8
21	0432	0505	0532	1924	1951	2024	0903	****	****	2252	14
22	0431	0505	0531	1925	1952	2025	0955	1947	2106	2332	21
23	0431	0504	0531	1926	1953	2026	1046	1947	2144	****	29
24	0430	0504	0530	1926	1953	2027	1139	1948	2220	0008	38
25	0430	0503	0530	1927	1954	2027	1232	1949	2254	0044	47
26	0429	0503	0529	1928	1954	2028	1326	1949	2327	0118	57
27	0429	0502	0529	1928	1955	2029	1422	1950	****	0153	66
28	0428	0502	0529	1929	1956	2030	1519	1950	0000	0228	75
29	0428	0502	0528	1929	1956	2030	1619	1951	0032	0306	84
30	0427	0501	0528	1930	1957	2031	1722	2009	0107	0348	91
31	0427	0501	0528	1930	1957	2032	1826	2121	0145	0433	96

BMNT-Beginning Morning Nautical Twilight

EENT-Ending Evening Nautical Twilight

BMCT-Beginning Morning Civil Twilight

EECT-Ending Evening Civil Twilight

NVG-Night Vision Goggle

For NVG Lunar Alt > 30 deg, Solar Alt < -5 deg,
and Lunar Illum > 23 %

ASTRONOMICAL DATA TABLES FOR FORT HOOD, TEXAS

Latitude 31 deg 4 min N Longitude 97 deg 50 min W SOLAR / LUNAR DATA

ALL TIMES ARE LOCAL TIME (GMT - 6 Hrs 0 Mins)

PERCENT ILLUMINATION IS GIVEN FOR 00 LST

JUNE 1996

DAY	BMNT	BMCT	SUN RISE	SUN SET	EECT	EENT	MOON RISE	START NVG	STOP NVG	MOON SET	% ILLUM
1	0426	0501	0528	1931	1958	2032	1930	2230	0229	0525	99
2	0426	0500	0527	1932	1959	2033	2032	2333	0321	0622	100
3	0426	0500	0527	1932	1959	2033	2130	****	0423	0724	97
4	0426	0500	0527	1933	2000	2034	2223	0026	0505	0829	92
5	0425	0500	0527	1933	2000	2035	2311	0111	0505	0935	84
6	0425	0459	0527	1934	2001	2035	2355	0151	0505	1041	75
7	0425	0459	0527	1934	2001	2036	****	0228	0505	1144	64
8	0425	0459	0527	1934	2002	2036	0035	0303	0505	1246	53
9	0425	0459	0526	1935	2002	2037	0113	0339	0505	1346	42
10	0425	0459	0526	1935	2003	2037	0151	0415	0505	1445	31
11	0424	0459	0526	1936	2003	2038	0229	****	****	1543	22
12	0424	0459	0526	1936	2004	2038	0308	****	****	1640	14
13	0424	0459	0526	1936	2004	2039	0349	****	****	1735	7
14	0424	0459	0527	1937	2004	2039	0433	****	****	1828	3
15	0424	0459	0527	1937	2005	2039	0519	****	****	1919	1
16	0425	0459	0527	1937	2005	2040	0607	****	****	2006	0
17	0425	0459	0527	1938	2005	2040	0657	****	****	2050	2
18	0425	0500	0527	1938	2006	2040	0748	****	****	2131	5
19	0425	0500	0527	1938	2006	2040	0840	****	****	2208	10
20	0425	0500	0527	1938	2006	2041	0932	****	****	2244	16
21	0425	0500	0528	1939	2006	2041	1024	****	****	2318	23
22	0426	0500	0528	1939	2007	2041	1117	2001	2127	2352	32
23	0426	0501	0528	1939	2007	2041	1211	2001	2200	****	41
24	0426	0501	0528	1939	2007	2041	1306	2001	2231	0026	51
25	0426	0501	0529	1939	2007	2041	1404	2001	2304	0102	60
26	0427	0502	0529	1939	2007	2041	1503	2001	2339	0140	70
27	0427	0502	0529	1939	2007	2041	1605	2001	****	0223	80
28	0427	0502	0530	1940	2007	2041	1709	2006	0019	0310	88
29	0428	0503	0530	1940	2007	2041	1812	2113	0107	0404	94
30	0428	0503	0530	1940	2007	2041	1914	2212	0204	0504	98

BMNT-Beginning Morning Nautical Twilight

EENT-Ending Evening Nautical Twilight

BMCT-Beginning Morning Civil Twilight

EECT-Ending Evening Civil Twilight

NVG-Night Vision Goggle

For NVG Lunar Alt > 30 deg, Solar Alt < -5 deg,
and Lunar Illum > 23 %

ASTRONOMICAL DATA TABLES FOR FORT HOOD, TEXAS
Latitude 31 deg 4 min N Longitude 97 deg 50 min W SOLAR / LUNAR DATA
ALL TIMES ARE LOCAL TIME (GMT - 6 Hrs 0 Mins)
PERCENT ILLUMINATION IS GIVEN FOR 00 LST

JULY 1996

DAY	SUN RISE	SUN SET	EECT	EENT	MOON RISE	START NVG	STOP NVG	MOON SET	% ILLUM
BMNT	BMCT								
1	0429	0503	0531	1940	2007	2041	2011	2302	0310
2	0429	0504	0531	1939	2007	2041	2102	2347	0423
3	0430	0504	0532	1939	2007	2041	2150	****	0510
4	0430	0505	0532	1939	2007	2041	2233	0027	0510
5	0431	0505	0532	1939	2007	2041	2314	0103	0511
6	0431	0506	0533	1939	2006	2040	2353	0140	0511
7	0432	0506	0533	1939	2006	2040	****	0217	0511
8	0433	0507	0534	1939	2006	2040	0031	0255	0512
9	0433	0507	0534	1938	2006	2040	0110	0334	0513
10	0434	0508	0535	1938	2005	2039	0150	0416	0513
11	0434	0508	0535	1938	2005	2039	0232	****	1624
12	0435	0509	0536	1938	2005	2038	0317	****	1715
13	0436	0509	0537	1937	2004	2038	0404	****	1803
14	0436	0510	0537	1937	2004	2037	0453	****	1848
15	0437	0511	0538	1937	2003	2037	0543	****	1930
16	0438	0511	0538	1936	2003	2036	0635	****	2009
17	0438	0512	0539	1936	2003	2036	0727	****	2046
18	0439	0513	0539	1935	2002	2035	0819	****	2120
19	0440	0513	0540	1935	2001	2035	0912	****	2154
20	0441	0514	0541	1934	2001	2034	1005	1956	2002
21	0441	0514	0541	1934	2000	2033	1058	1955	2033
22	0442	0515	0542	1933	2000	2033	1153	1955	2105
23	0443	0516	0543	1933	1959	2032	1251	1954	2137
24	0444	0516	0543	1932	1958	2031	1350	1953	2214
25	0445	0517	0544	1932	1958	2031	1451	1953	2257
26	0445	0518	0544	1931	1957	2030	1553	1952	2346
27	0446	0518	0545	1930	1956	2029	1654	1953	****
28	0447	0519	0546	1930	1956	2028	1753	2049	0046
29	0448	0520	0546	1929	1955	2027	1848	2137	0346
30	0449	0520	0547	1928	1954	2026	1939	2220	0452
31	0449	0521	0548	1927	1953	2025	2025	2259	0602
									99

BMNT-Beginning Morning Nautical Twilight

EENT-Ending Evening Nautical Twilight

BMCT-Beginning Morning Civil Twilight

EECT-Ending Evening Civil Twilight

NVG-Night Vision Goggle

For NVG Lunar Alt > 30 deg, Solar Alt < -5 deg,
and Lunar Illum > 23 %

ASTRONOMICAL DATA TABLES FOR FORT HOOD, TEXAS

Latitude 31 deg 4 min N Longitude 97 deg 50 min W SOLAR / LUNAR DATA

ALL TIMES ARE LOCAL TIME (GMT - 6 Hrs 0 Mins)

PERCENT ILLUMINATION IS GIVEN FOR 00 LST

AUGUST 1996

DAY	SUN RISE	SUN SET	EECT	EENT	MOON RISE	START NVG	STOP NVG	MOON SET	% ILLUM
	BMNT	BMCT							
1	0450	0522	0548	1927	1953	2025	2108	2337	0818 95
2	0451	0523	0549	1926	1952	2024	2150	****	0924 89
3	0452	0523	0550	1925	1951	2023	2229	0015	1028 81
4	0453	0524	0550	1924	1950	2022	2309	0054	1129 71
5	0453	0525	0551	1923	1949	2021	2350	0133	1228 61
6	0454	0525	0551	1922	1948	2020	****	0215	1325 50
7	0455	0526	0552	1922	1947	2018	0032	0258	1419 40
8	0456	0527	0553	1921	1946	2017	0116	0343	1511 30
9	0457	0527	0553	1920	1945	2016	0202	****	1600 22
10	0458	0528	0554	1919	1944	2015	0250	****	1646 14
11	0458	0529	0555	1918	1943	2014	0340	****	1729 8
12	0459	0529	0555	1917	1942	2013	0431	****	1809 4
13	0500	0530	0556	1916	1941	2012	0523	****	1847 1
14	0501	0531	0557	1915	1940	2011	0615	****	1922 0
15	0502	0532	0557	1914	1939	2009	0708	****	1957 1
16	0502	0532	0558	1913	1938	2008	0801	****	2030 4
17	0503	0533	0559	1912	1937	2007	0854	****	2104 8
18	0504	0534	0559	1910	1936	2006	0948	****	2140 14
19	0505	0534	0600	1909	1935	2004	1044	****	2217 22
20	0505	0535	0600	1908	1934	2003	1141	1929	2014 31
21	0506	0536	0601	1907	1932	2002	1240	1928	2053 41
22	0507	0536	0602	1906	1931	2001	1340	1926	2137 **** 51
23	0507	0537	0602	1905	1930	1959	1439	1925	2230 0034 62
24	0508	0538	0603	1904	1929	1958	1537	1924	2334 0131 73
25	0509	0538	0603	1903	1928	1957	1633	1926	**** 0232 82
26	0510	0539	0604	1901	1926	1956	1725	2009	0045 0338 90
27	0510	0540	0605	1900	1925	1954	1813	2050	0202 0446 96
28	0511	0540	0605	1859	1924	1953	1858	2130	0317 0554 99
29	0512	0541	0606	1858	1923	1952	1941	2208	0430 0702 100
30	0512	0541	0606	1857	1921	1950	2023	2247	0540 0808 97
31	0513	0542	0607	1855	1920	1949	2104	2328	0547 0913 92

BMNT-Beginning Morning Nautical Twilight

EENT-Ending Evening Nautical Twilight

BMCT-Beginning Morning Civil Twilight

EECT-Ending Evening Civil Twilight

NVG-Night Vision Goggle

For NVG Lunar Alt > 30 deg, Solar Alt < -5 deg,
and Lunar Illum > 23 %

ASTRONOMICAL DATA TABLES FOR FORT HOOD, TEXAS
Latitude 31 deg 4 min N Longitude 97 deg 50 min W SOLAR / LUNAR DATA
ALL TIMES ARE LOCAL TIME (GMT - 6 Hrs 0 Mins)
PERCENT ILLUMINATION IS GIVEN FOR 00 LST

SEPTEMBER 1996

DAY	BMNT	BMCT	SUN RISE	SUN SET	EECT	EENT	MOON RISE	START NVG	STOP NVG	MOON SET	% ILLUM
1	0514	0543	0608	1854	1919	1948	2145	****	0548	1014	84
2	0514	0543	0608	1853	1918	1947	2228	0010	0548	1114	76
3	0515	0544	0609	1852	1916	1945	2312	0054	0549	1211	66
4	0516	0545	0609	1850	1915	1944	2358	0139	0549	1305	56
5	0516	0545	0610	1849	1914	1943	****	0226	0550	1355	46
6	0517	0546	0610	1848	1912	1941	0046	0315	0551	1443	36
7	0518	0546	0611	1847	1911	1940	0135	0404	0551	1527	27
8	0518	0547	0612	1845	1910	1939	0226	****	****	1608	19
9	0519	0548	0612	1844	1909	1937	0318	****	****	1647	12
10	0520	0548	0613	1843	1907	1936	0410	****	****	1723	7
11	0520	0549	0613	1842	1906	1935	0503	****	****	1758	3
12	0521	0550	0614	1840	1905	1933	0555	****	****	1832	0
13	0522	0550	0615	1839	1903	1932	0649	****	****	1906	0
14	0522	0551	0615	1838	1902	1930	0744	****	****	1942	2
15	0523	0551	0616	1836	1901	1929	0840	****	****	2019	5
16	0524	0552	0616	1835	1859	1928	0936	****	****	2059	11
17	0524	0553	0617	1834	1858	1926	1035	****	****	2142	18
18	0525	0553	0617	1833	1857	1925	1133	1852	1935	2230	27
19	0525	0554	0618	1831	1855	1924	1231	1851	2024	2323	37
20	0526	0554	0619	1830	1854	1922	1329	1849	2122	****	48
21	0527	0555	0619	1829	1853	1921	1423	1848	2228	0021	59
22	0527	0556	0620	1827	1852	1920	1515	1847	2339	0123	70
23	0528	0556	0620	1826	1850	1918	1603	1846	****	0228	80
24	0529	0557	0621	1825	1849	1917	1648	1922	0053	0334	88
25	0529	0557	0622	1824	1848	1916	1732	2000	0206	0440	95
26	0530	0558	0622	1822	1846	1915	1813	2039	0317	0546	99
27	0530	0559	0623	1821	1845	1913	1855	2119	0424	0651	100
28	0531	0559	0623	1820	1844	1912	1937	2201	0529	0755	98
29	0532	0600	0624	1818	1843	1911	2020	2245	0605	0857	94
30	0532	0600	0625	1817	1841	1909	2104	2331	0605	0957	88

BMNT-Beginning Morning Nautical Twilight

EENT-Ending Evening Nautical Twilight

BMCT-Beginning Morning Civil Twilight

EECT-Ending Evening Civil Twilight

NVG-Night Vision Goggle

For NVG Lunar Alt > 30 deg, Solar Alt < -5 deg,
and Lunar Illum > 23 %

ASTRONOMICAL DATA TABLES FOR FORT HOOD, TEXAS

Latitude 31 deg 4 min N Longitude 97 deg 50 min W SOLAR / LUNAR DATA

ALL TIMES ARE LOCAL TIME (GMT - 6 Hrs 0 Mins)

PERCENT ILLUMINATION IS GIVEN FOR 00 LST

OCTOBER 1996

DAY	SUN RISE	SUN SET	EECT	EENT	MOON RISE	START NVG	STOP NVG	MOON SET	% ILLUM
	BMNT	BMCT							
1	0533	0601	0625	1816	1840	1908	2151	****	0606
2	0534	0602	0626	1815	1839	1907	2239	0019	0606
3	0534	0602	0626	1813	1838	1906	2328	0108	0607
4	0535	0603	0627	1812	1836	1904	****	0157	0608
5	0535	0604	0628	1811	1835	1903	0019	0247	0608
6	0536	0604	0628	1810	1834	1902	0111	0337	0609
7	0537	0605	0629	1809	1833	1901	0203	0428	0609
8	0537	0605	0630	1807	1831	1900	0255	****	1557
9	0538	0606	0630	1806	1830	1858	0347	****	1631
10	0539	0607	0631	1805	1829	1857	0441	****	1706
11	0539	0607	0632	1804	1828	1856	0536	****	1741
12	0540	0608	0632	1803	1827	1855	0632	****	1818
13	0540	0609	0633	1801	1826	1854	0730	****	1858
14	0541	0609	0634	1800	1825	1853	0828	****	1941
15	0542	0610	0634	1759	1823	1852	0928	****	2028
16	0542	0611	0635	1758	1822	1851	1027	****	2119
17	0543	0611	0636	1757	1821	1850	1124	1817	1917
18	0544	0612	0637	1756	1820	1848	1219	1816	2019
19	0544	0613	0637	1755	1819	1847	1311	1815	2127
20	0545	0613	0638	1754	1818	1846	1359	1813	2238
21	0546	0614	0639	1753	1817	1845	1444	1812	2349
22	0546	0615	0639	1752	1816	1844	1526	1811	0226
23	0547	0616	0640	1751	1815	1844	1607	1834	0058
24	0548	0616	0641	1750	1814	1843	1648	1912	0206
25	0548	0617	0642	1749	1813	1842	1728	1953	0311
26	0549	0618	0642	1748	1812	1841	1811	2036	0413
27	0550	0618	0643	1747	1812	1840	1855	2121	0514
28	0551	0619	0644	1746	1811	1839	1941	2208	0612
29	0551	0620	0645	1745	1810	1838	2029	2257	0625
30	0552	0621	0646	1744	1809	1837	2119	2347	0626
31	0553	0621	0646	1743	1808	1837	2210	****	0626
									1116
									78

BMNT-Beginning Morning Nautical Twilight

EENT-Ending Evening Nautical Twilight

BMCT-Beginning Morning Civil Twilight

EECT-Ending Evening Civil Twilight

NVG-Night Vision Goggle

For NVG Lunar Alt > 30 deg, Solar Alt < -5 deg, and Lunar Illum > 23 %

ASTRONOMICAL DATA TABLES FOR FORT HOOD, TEXAS
Latitude 31 deg 4 min N Longitude 97 deg 50 min W SOLAR / LUNAR DATA
ALL TIMES ARE LOCAL TIME (GMT - 6 Hrs 0 Mins)
PERCENT ILLUMINATION IS GIVEN FOR 00 LST

NOVEMBER 1996

DAY	SUN RISE	SUN SET	EECT	EENT	MOON RISE	START NVG	STOP NVG	MOON SET	% ILLUM
BMNT	BMCT								
1 0553	0622	0647	1742	1807	1836	2302	0038	0627	1200 70
2 0554	0623	0648	1741	1807	1835	2353	0129	0628	1241 60
3 0555	0624	0649	1741	1806	1834	****	0219	0629	1319 51
4 0556	0625	0650	1740	1805	1834	0045	0311	0629	1355 41
5 0556	0625	0650	1739	1804	1833	0137	0403	0630	1429 32
6 0557	0626	0651	1738	1804	1832	0231	****	****	1503 23
7 0558	0627	0652	1738	1803	1832	0325	****	****	1538 15
8 0558	0628	0653	1737	1802	1831	0420	****	****	1614 9
9 0559	0628	0654	1736	1802	1831	0517	****	****	1653 4
10 0600	0629	0654	1736	1801	1830	0616	****	****	1735 1
11 0601	0630	0655	1735	1801	1830	0717	****	****	1821 0
12 0602	0631	0656	1734	1800	1829	0818	****	****	1913 2
13 0602	0632	0657	1734	1800	1829	0918	****	****	2009 6
14 0603	0633	0658	1733	1759	1828	1015	****	****	2109 12
15 0604	0633	0659	1733	1759	1828	1109	1754	1919	2212 20
16 0605	0634	0659	1732	1758	1827	1158	1753	2029	2315 30
17 0605	0635	0700	1732	1758	1827	1244	1753	2139	**** 41
18 0606	0636	0701	1731	1757	1827	1326	1752	2248	0019 52
19 0607	0637	0702	1731	1757	1826	1406	1752	2355	0122 63
20 0608	0637	0703	1731	1757	1826	1445	1752	****	0224 74
21 0609	0638	0704	1730	1756	1826	1525	1751	0059	0326 83
22 0609	0639	0705	1730	1756	1826	1605	1830	0201	0427 90
23 0610	0640	0706	1730	1756	1825	1648	1913	0301	0527 96
24 0611	0641	0707	1729	1756	1825	1732	1959	0359	0626 99
25 0612	0641	0707	1729	1755	1825	1819	2048	0455	0724 100
26 0612	0642	0708	1729	1755	1825	1909	2137	0549	0818 99
27 0613	0643	0709	1729	1755	1825	2000	2228	0640	0908 96
28 0614	0644	0710	1729	1755	1825	2051	2319	0649	0955 91
29 0615	0645	0711	1728	1755	1825	2143	****	0650	1038 84
30 0616	0645	0712	1728	1755	1825	2235	0010	0650	1117 77

BMNT-Beginning Morning Nautical Twilight
EENT-Ending Evening Nautical Twilight
BMCT-Beginning Morning Civil Twilight
EECT-Ending Evening Civil Twilight

NVG-Night Vision Goggle

For NVG Lunar Alt > 30 deg, Solar Alt < -5 deg,
and Lunar Illum > 23 %

ASTRONOMICAL DATA TABLES FOR FORT HOOD, TEXAS

Latitude 31 deg 4 min N Longitude 97 deg 50 min W SOLAR / LUNAR DATA

ALL TIMES ARE LOCAL TIME (GMT - 6 Hrs 0 Mins)

PERCENT ILLUMINATION IS GIVEN FOR 00 LST

DECEMBER 1996

DAY	SUN RISE	SUN SET	EECT	EENT	MOON RISE	START NVG	STOP NVG	MOON SET	% ILLUM
	BMNT	BMCT							
1	0616	0646	0713	1728	1755	1825	2328	0102	0651
2	0617	0647	0713	1728	1755	1825	****	0153	0652
3	0618	0648	0714	1728	1755	1825	0020	0245	0653
4	0618	0648	0715	1728	1755	1825	0113	0340	0653
5	0619	0649	0716	1728	1755	1825	0207	0437	0654
6	0620	0650	0717	1728	1755	1825	0302	****	1447
7	0621	0651	0717	1729	1755	1825	0359	****	1527
8	0621	0651	0718	1729	1756	1826	0459	****	1611
9	0622	0652	0719	1729	1756	1826	0601	****	1701
10	0623	0653	0720	1729	1756	1826	0703	****	1756
11	0623	0653	0720	1729	1756	1826	0803	****	1856
12	0624	0654	0721	1730	1757	1827	0901	****	2000
13	0625	0655	0722	1730	1757	1827	0954	****	2105
14	0625	0655	0722	1730	1757	1827	1042	1752	1929
15	0626	0656	0723	1731	1758	1828	1127	1752	2040
16	0626	0656	0724	1731	1758	1828	1208	1753	2147
17	0627	0657	0724	1731	1758	1828	1247	1753	2252
18	0628	0658	0725	1732	1759	1829	1326	1754	2354
19	0628	0658	0725	1732	1759	1829	1405	1754	0120
20	0629	0659	0726	1733	1800	1830	1446	1755	0220
21	0629	0659	0726	1733	1800	1830	1529	1755	0320
22	0630	0700	0727	1734	1801	1831	1614	1842	0418
23	0630	0700	0727	1734	1801	1831	1702	1842	0515
24	0631	0701	0728	1735	1802	1832	1751	1930	0610
25	0631	0701	0728	1735	1803	1832	1843	0341	0701
26	0631	0701	0729	1736	1803	1833	1935	2020	0701
27	0632	0702	0729	1737	1804	1834	2027	2020	0701
28	0632	0702	0729	1737	1804	1834	2119	2111	0701
29	0633	0702	0730	1738	1805	1835	2212	2111	0701
30	0633	0703	0730	1739	1806	1836	2304	2111	0701
31	0633	0703	0730	1739	1806	1836	****	0130	0708

BMNT-Beginning Morning Nautical Twilight

EENT-Ending Evening Nautical Twilight

BMCT-Beginning Morning Civil Twilight

EECT-Ending Evening Civil Twilight

NVG-Night Vision Goggle

For NVG Lunar Alt > 30 deg, Solar Alt < -5 deg,
and Lunar Illum > 23 %

The proponent of this pamphlet is 3d Weather Squadron.

FOR THE COMMANDER:



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LTC, SC
DOIM

DANIEL R. ZANINI
COL, USA
Chief of Staff

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